KV-27TS20 RM-757

5299

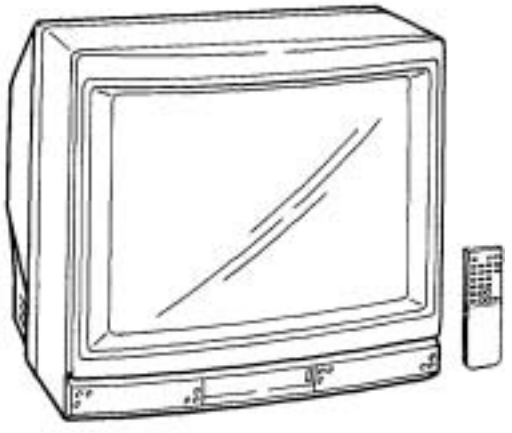
SERVICE MANUAL

US Model

Chassis No. SCC-A05P-A

Canadian Model

Chassis No. SCC-A50G-A



P-3A CHASSIS

Note: The service manual for RM-757 has been issued separately.

MODELS OF THE SAME SERIES	
KV-27TS30	

SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2–13 UHF: 14–69 Cable TV: 1–125
Picture tube	Microblack Trinitron tube **27-inch picture measured diagonally** 28-inch picture tube measured diagonally
Input	VIDEO INPUT (phono jacks) Video: 1 Vp-p, 75-ohms unbalanced, sync negative Audio: 500 mVrms (100% modulation) Impedance: 47 kilohms
Output	AUDIO OUTPUT (VARIABLE) (phono jacks) More than 408 mVrms at the maximum volume setting (variable) (100% modulation) Impedance: 10 kilohms
Power requirements	120 V AC, 60 Hz
Power consumption	160W (max.) 5W (in standby condition)
Dimensions	Approx. 672 x 650 x 524.5 mm (w/h/d)
Weight	49Kg
Sound output	**3W** x **3W** (music power)

Accessories supplied

Remote Commander RM-757 with 2 size AA batteries

Antenna connector .

Optional accessories

UIV mixer EAC-66

Connecting cord VMC-810S/820S RK-C74/150

Design and specifications subject to change without notice.

MICROFILM

TRINITRON® COLOR TV

SONY®

5299

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WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT (US MODEL ONLY)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

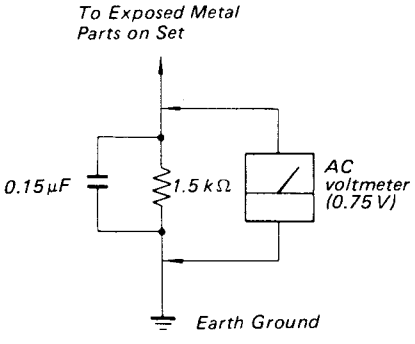


Fig. A. Using an AC voltmeter to check AC leakage.

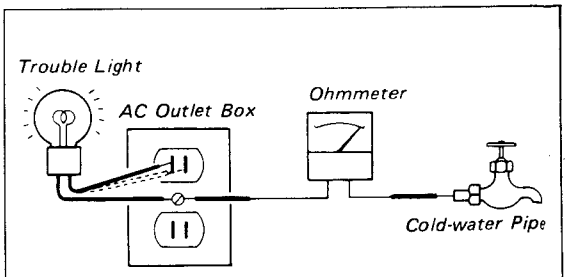
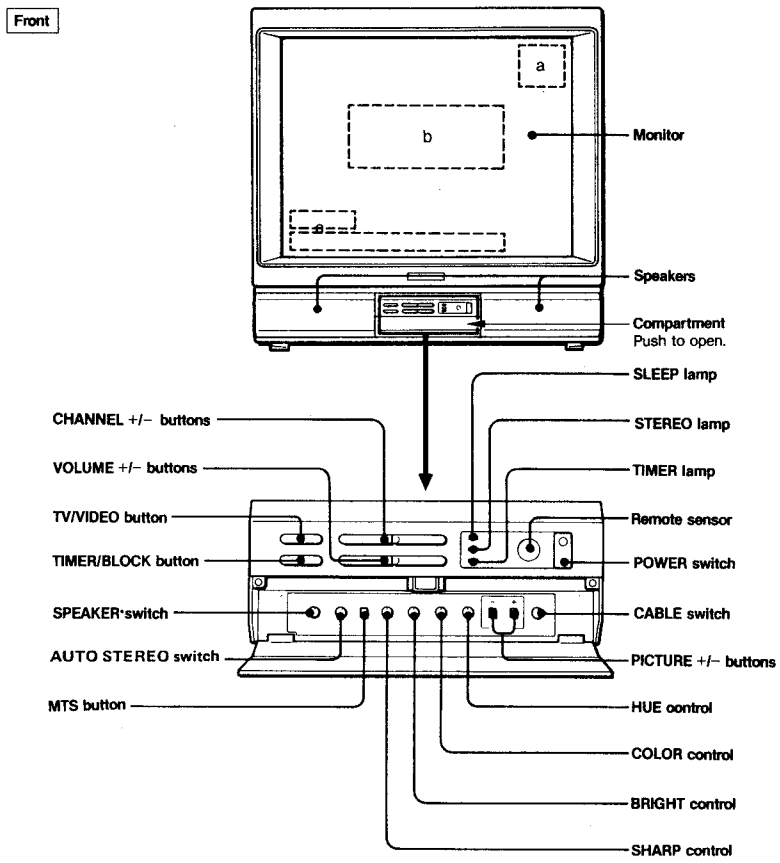


Fig. B. Checking for earth ground.

SECTION 1
GENERAL

1-1. LOCATION OF CONTORLS



On-screen displays

a) • Channel numbers
   • MTS mode indication
   • "MUTING", "SLEEP" or "VIDEO" mode indication
b) "AUTO PROGRAM", "TIMER" or "TIMER BLOCK" indication
c) • Bar display for volume or picture adjustment
   • Current time for Timer/Block.

1-2. TIMER/BLOCK

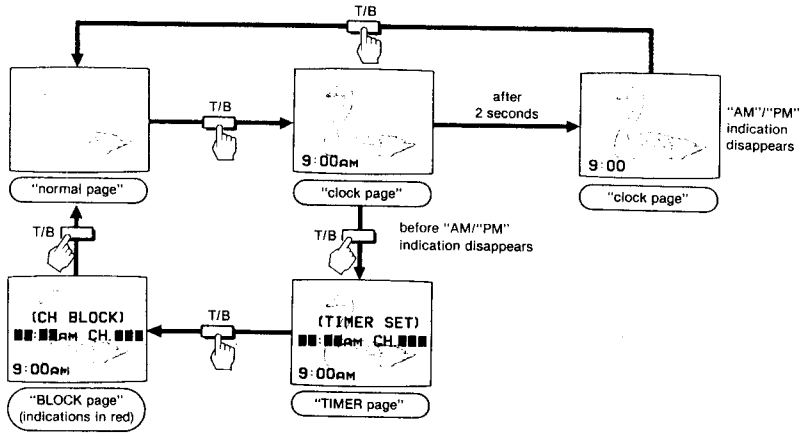
Available functions

Internal clock	Once the internal clock is set, the current time will appear on the screen. It is necessary to set the clock correctly to activate the program start TIMER and channel BLOCK.
Program start TIMER	Makes a program of your choice appear on the screen automatically at the desired time.
Channel BLOCK	Blocks a channel from appearing on the screen for 12 hours. Use channel BLOCK to prevent children from watching undesirable programs.

The buttons used for the above functions are located on the Remote Commander.

To set the internal clock, program start TIMER and channel BLOCK, you must summon the corresponding "pages": "clock page," "TIMER page" and "BLOCK page."

To change the "pages," press TIMER/BLOCK. T/B stands for the TIMER/BLOCK button.

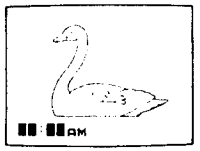


- All settings will be erased from the unit's memory if the unit is unplugged, or if a power failure occurs.
- The TIMER and BLOCK will operate only if the clock is set correctly.
- If the TIMER and BLOCK are set for overlapping times on the same channel, the blocked channel will appear on the screen at the time set on the TIMER.

How to Set the Internal Clock

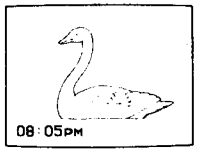
Example: To set the clock to 8:05 PM

1 Press TIMER/BLOCK once to change from "normal page" to "clock page."

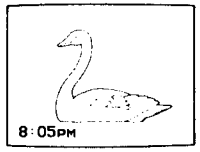


"clock page"

2 Press 0, 8, 0, 5, AM/PM (0 necessary).



3 If you have performed the operation correctly, press ENTER.
The numbers will "wink" to indicate that the clock has been set. (The 0 in front will disappear.)



If you have made a mistake, press CLEAR and return to step 2.

The "AM/PM" indication will disappear after 2 seconds.

To summon "TIMER page," press TIMER/BLOCK before the "AM"/"PM" indication disappears.
To return to "normal page," press TIMER/BLOCK after the "AM"/"PM" indication has disappeared.

To reset the clock, summon "clock page" and press CLEAR before the "AM"/"PM" indication disappears. Then follow the steps above from step 2.

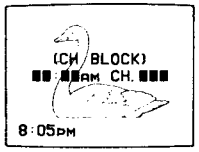
12:00 AM stands for midnight.
12:00 PM stands for noon.

How to Set the Channel BLOCK

Make sure that the clock has been set correctly before setting the channel BLOCK.

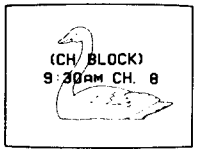
Example: To set the BLOCK for a program which begins at 9:30 AM on channel 8

1 Press TIMER/BLOCK three times to change from "normal page" to "BLOCK page."



"BLOCK page"
(indications in red)

2 Press 0, 9, 3, 0, ENTER (0 necessary).
Numbers will "wink" to indicate that the time has been set.
Press 8, ENTER (0 not necessary).
Numbers will "wink" to indicate that the channel has been set.



The BLOCK has now been set.
If you have made a mistake, press CLEAR and return to step 2.

At the preset time, the picture of the selected channel will be blocked from view and the sound will be muted. A red "BLOCKED" indication will appear on the screen while the channel is blocked.
Normal reception will be resumed after 12 hours.

To return to normal reception while the channel is blocked, recall "BLOCK page" and press CLEAR.

The BLOCK setting blocks a specified channel for the same 12-hour period everyday.

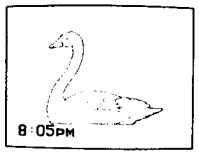
To clear BLOCK setting, summon "BLOCK page" and press CLEAR.
To reset, clear the setting and follow the steps above from step 2.

How to Set the Program Start TIMER

Make sure that the clock has been set correctly before setting the program start TIMER.

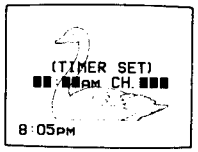
Example: To set the TIMER for a program which begins at 10:30 PM on channel 12

1 Press TIMER/BLOCK once to change from "normal page" to "clock page."



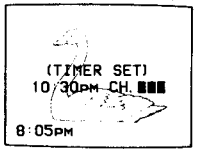
"clock page"

2 Press TIMER/BLOCK before the "AM"/"PM" indication disappears and summon "TIMER page."

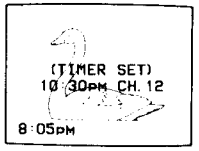


"TIMER page"

3 Press 1, 0, 3, 0, AM/PM, ENTER.
Numbers will "wink" to indicate that the time has been set.



4 Press 1, 2, ENTER (0 not necessary).
Numbers will "wink" to indicate that the channel has been set.



The TIMER lamp will light up to indicate that the TIMER has been set.
If you have made a mistake, press CLEAR and return to step 3.

At the preset time, the selected channel will appear on the screen and the TIMER lamp will go out. The TIMER will operate whether you are watching a TV program or a VCP playback, or even if you have turned off the TV.

If no button is pressed within 2 hours after the preset time, an "OFF" indication will appear on the screen for 1 minute. If a button is still not touched during the 1 minute, the TV will turn off automatically as a safety precaution.

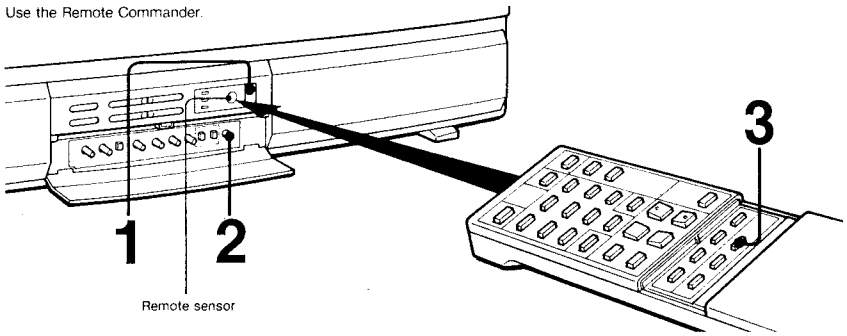
The TIMER operates only once, but the time and the channel will remain in the unit's memory.
If you want to preset the same channel at the same time for a future date, press TIMER OFF/REPEAT. The TIMER lamp will light up to indicate that the TIMER has been reactivated.

If you want to deactivate the TIMER, press TIMER OFF/REPEAT again so that the TIMER lamp goes out .
It is not necessary to summon "TIMER page" to use the TIMER OFF/REPEAT button. Furthermore, this button is effective even if the TV has been turned off.

To clear the TIMER setting, summon "TIMER page" and press CLEAR.
To reset, clear the setting and follow the steps from step 3.

1-3. PRESETTING TV CHANNELS

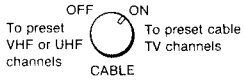
Use the Remote Commander.



1 Turn the TV on.

POWER

2 Set CABLE to the correct position.



3 Press AUTO PROG.

AUTO PROG.

"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the unit's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

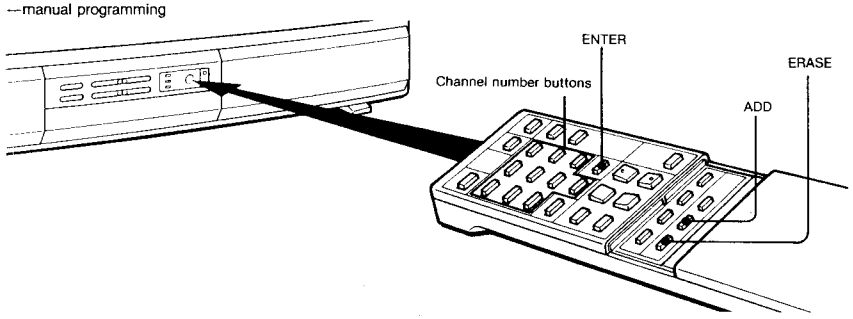
Receivable channels of this TV are:
VHF: 2-13
UHF: 14-69
Cable: 1-125

To check preset channels
Press CHANNEL +/–.

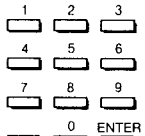
To add the channels that could not be preset with this automatic programming because their signal strength was too weak, or **to erase unnecessary channels,** follow the steps in "To preset only the desired channels".

To add the channels that could not be preset with this automatic programming because their signal strength was too weak, or **to erase unnecessary channels,** follow the steps in "To preset only the desired channels" on the next page.

To preset only the desired channels
—manual programming



1 Press the channel number button(s) and then ENTER to select the channel to be added.



2 Press ADD.

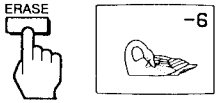
ADD

A "+" appears for a moment to the left of the on-screen channel number display. This channel has now been added to the channel scan memory.

To add other channels
Repeat steps 1 to 2.

To erase unnecessary channels
1 **Select the channel to be erased.**
2 **Press ERASE.**
A "–" appears for a moment to the left of the on-screen channel number display. This channel has now been erased from the channel scan memory.

ERASE



Repeat steps 1 and 2 for other channels to be erased.

When a VHF or UHF channel is erased
The cable TV channel with the same number is also erased and vice versa.

Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	1	5	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corresponding CATV channel	A–8	A–7	A–6	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

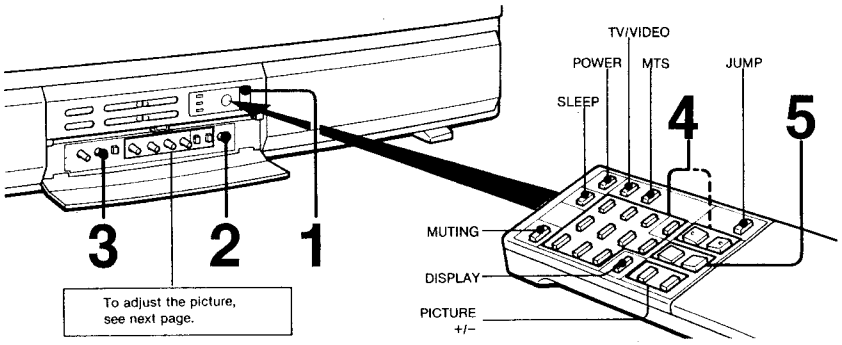
31	32	33	34	35	36	37	38	39	.....	93	94	95	96	97	98	99	100	101	102	.....	123	124	125
R	S	T	U	V	W	W+1	W+2	W+3	.....	W+57	W+58	A–5	A–4	A–3	A–2	A–1	W+59	W+60	W+61	.....	W+82	W+83	W+84

Check with your local cable TV company for more complete information on the available channels.

Pay cable TV systems use scrambled or encoded signals and require special converters (decorders) in addition to the normal cable connection.

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

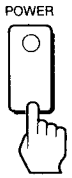
1-4. WATCHING TV PROGRAMS



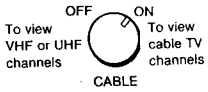
To adjust the picture

SHARP	BRIGHT	COLOR	HUE	PICTURE –	PICTURE +
for less sharpness	for more sharpness	for less brightness	for more brightness	for less color intensity	for more color intensity	skin tones become purplish	skin tones become greenish	Press to decrease picture contrast with soft color	Press to increase picture with vivid contrast color

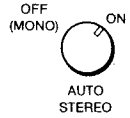
1 **Press POWER to turn the TV on.**



2 **Set CABLE to the appropriate position.**

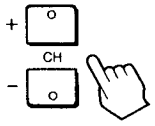


3 **Set AUTO STEREO to ON.**

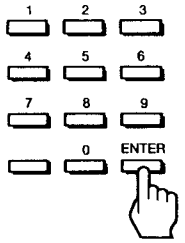


4 **Select a channel in one of the following two ways:**

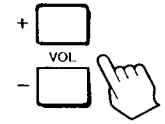
To scan the preset channels in numerical sequence, press CH +/–.



To select a channel directly, press the channel number button(s) and then ENTER. For example, to select channel 10, press 1, 0 and ENTER.



5 **Press VOL + or – to adjust the volume.**



When receiving a Multichannel TV Sound program
Each time MTS is pressed, MAIN, SAP (Second Audio Program), or both are selected in sequence. The corresponding indication will appear on the screen for a while.

If noise makes it hard to receive a very weak TV stereo program
Set AUTO STEREO on the TV to OFF so that the STEREO lamp goes off.
The stereo effect will be cancelled, but reception will be stabilized and the noise will be reduced.

To mute the sound
Press MUTING. The "MUTING" indication will appear on the screen. To restore the sound, press MUTING again or VOL +/–.

To keep the channel display on the screen
Press DISPLAY.

To switch quickly between 2 channels
Press JUMP. Each time JUMP is pressed, the channel which appeared on the screen directly before is recalled. This button enables you to keep track of two programs alternately.

To have the TV turn off automatically after about 1 hour
Press SLEEP. The "SLEEP" indication will appear on the screen for a few seconds and the SLEEP lamp on the TV will remain lit until the TV is turned off.

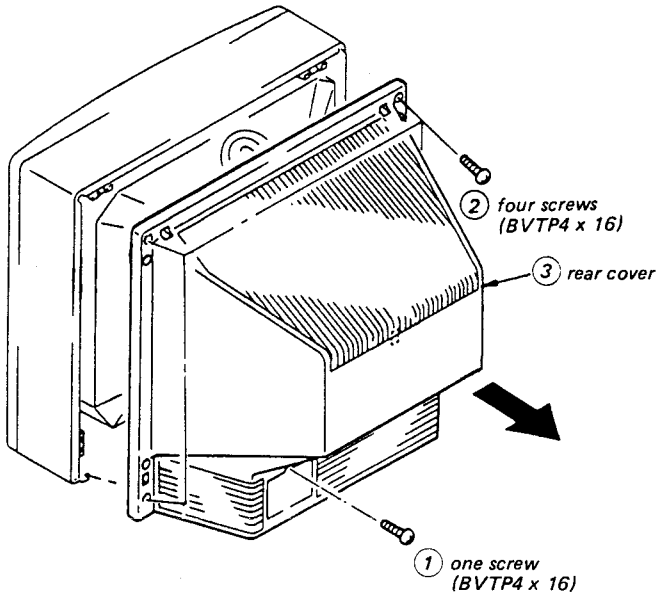
To cancel the SLEEP timer, press SLEEP again so that the SLEEP lamp goes out, or turn off the TV.

To turn off the system
Press POWER again.

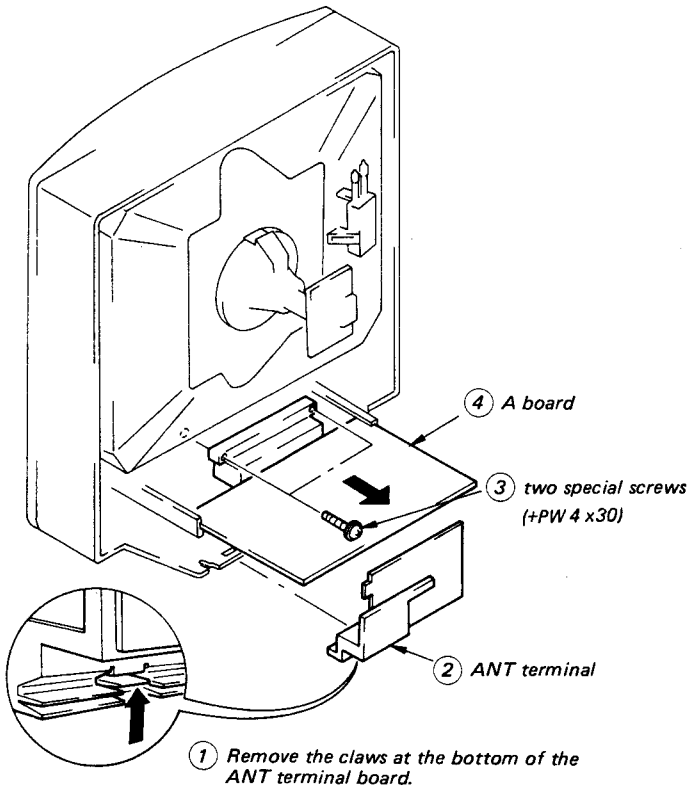
SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

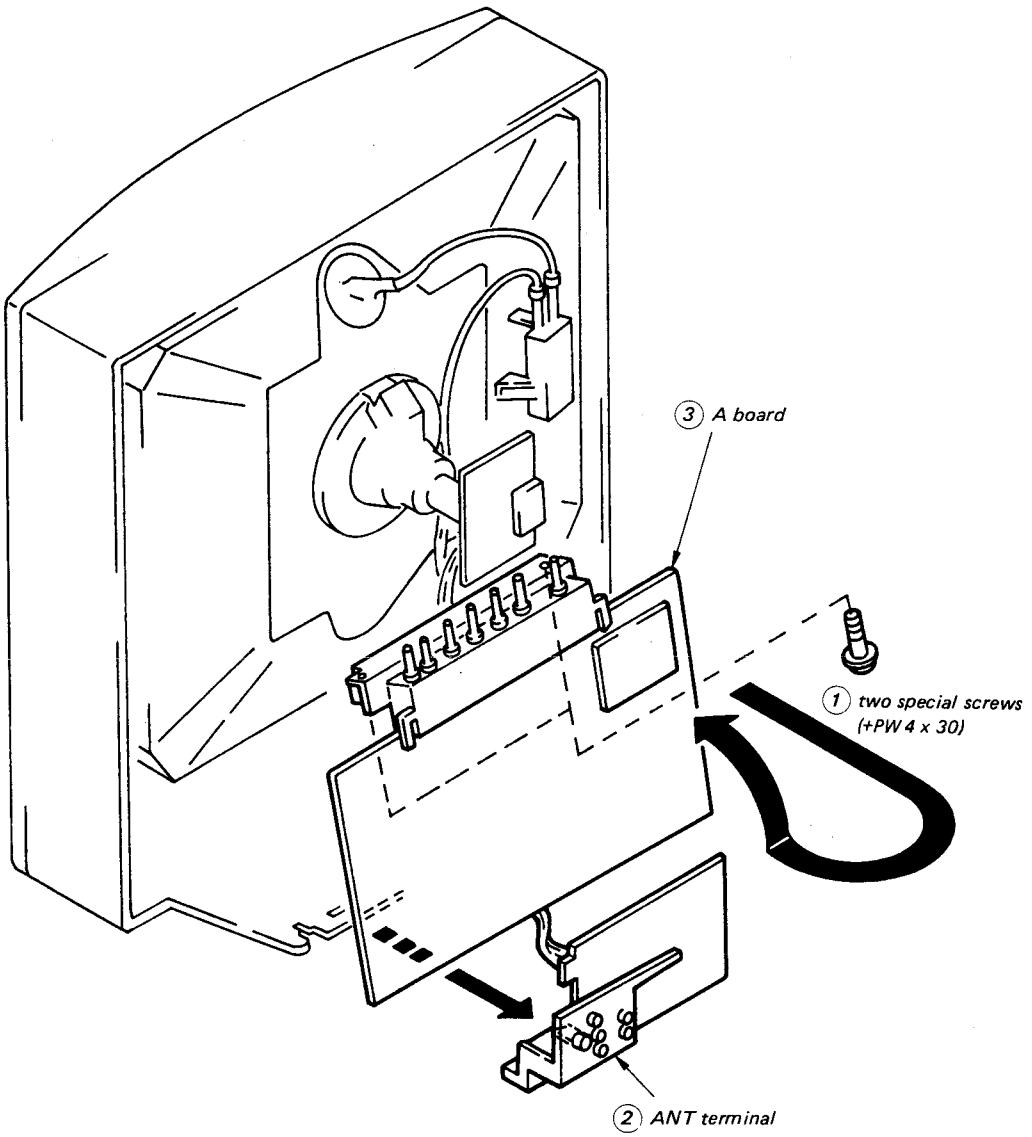
Note: *Incase a REAR COVER HOLDER is broken, secure the REAR COVER using a cross-head BVTP4 x 16 screw.*



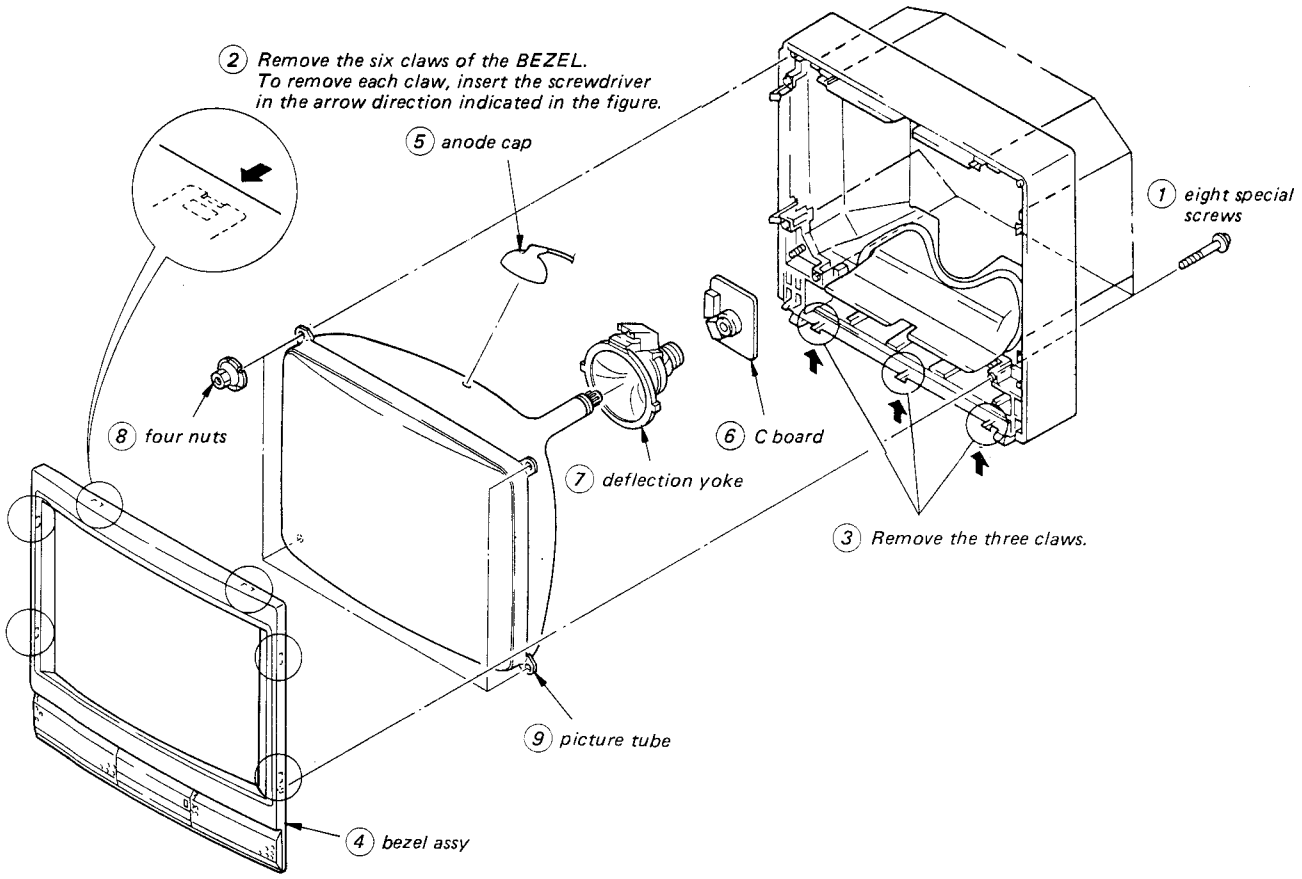
2-2. A BOARD REMOVAL



2-3. SERVICE POSITION

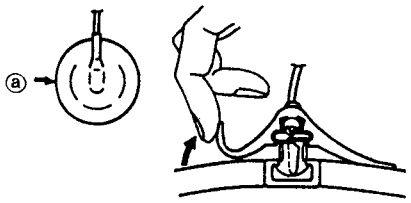


2-4. PICTURE TUBE REMOVAL

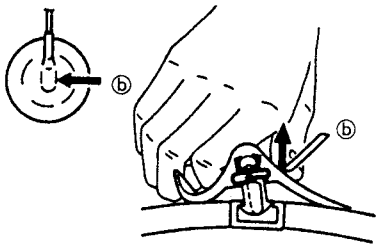

② Remove the six claws of the BEZEL.
To remove each claw, insert the screwdriver
in the arrow direction indicated in the figure.
⑤ anode cap
① eight special screws
⑧ four nuts
⑥ C board
⑦ deflection yoke
③ Remove the three claws.
⑨ picture tube
④ bezel assy

2-5. REMOVAL OF ANODE CAP

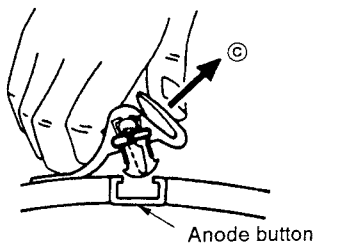
- **REMOVAL OF ANODE-CAP**
- **REMOVING PROCEDURES**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



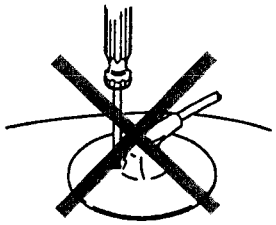
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

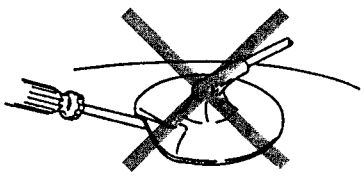


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

- **HOW TO HANDLE AN ANODE-CAP**

① Don't hurt the surface of anode-caps with sharp shaped material !
② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built in the rubber.
③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control . . . . . RESET

BRIGHTNESS control . . . . . center

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

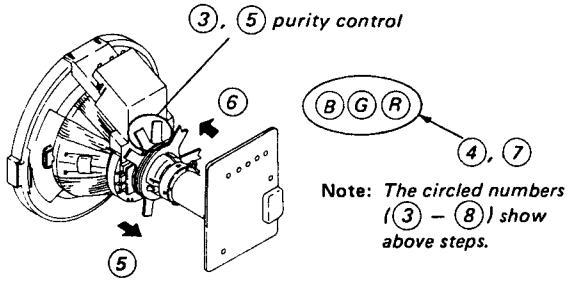
Note: Test Equipment Required.
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

Preparation:

- Feed in the white pattern.
- Before starting, degauss the entire screen.

1. Turn on set power supply and receive an all-white signal.
2. Evenly degauss the entire screen.
3. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Figure 3-1.
4. Set BKG VR Ⓡ to maximum and set Ⓑ and Ⓖ to minimum.
5. Move the deflection yoke back, and adjust the purity control so that Ⓡ is in the center and Ⓖ and Ⓑ are at the sides, evenly. (Figure 3-2.)
6. Move the deflection yoke forward so that the entire screen is red.
   * If the detlection yoke is pushed all the way to the CRT then moved slightly back, landing adjustment is easier.
7. Substitute Ⓖ , then Ⓑ for Ⓡ in step 4 and check landing.
8. Rotate Ⓡ , Ⓖ and Ⓑ once each and check landing.
9. When landing is not right, adjust the purity control and use magnets as shown in Figure 3-3. then repeat steps 7 and 8 .
10. When a magnet is used, be sure to perform step 2 , and tighten deflection yoke mounting screw loosely.



Note: *The circled numbers (③ – ⑧) show above steps.*

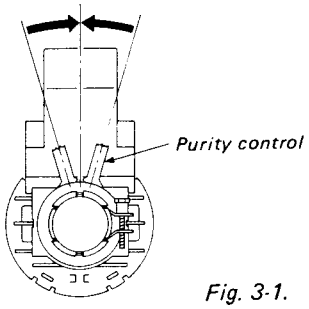


Fig. 3-1.

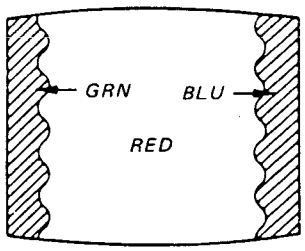


Fig. 3-2.

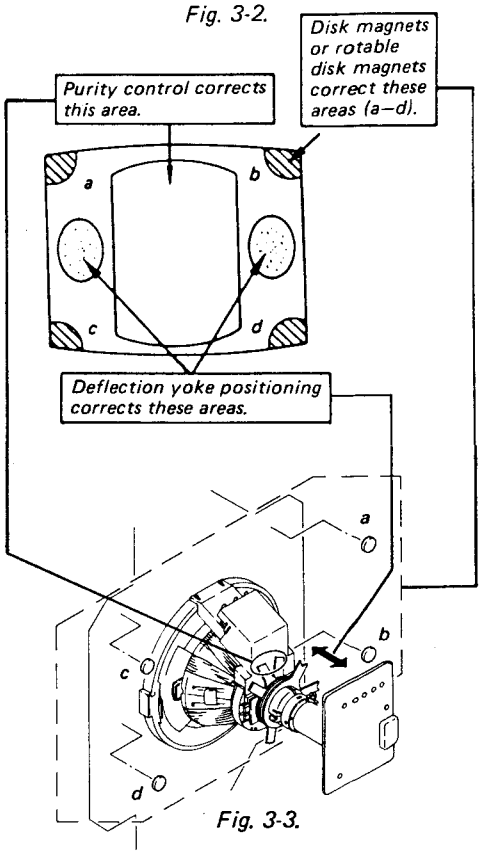


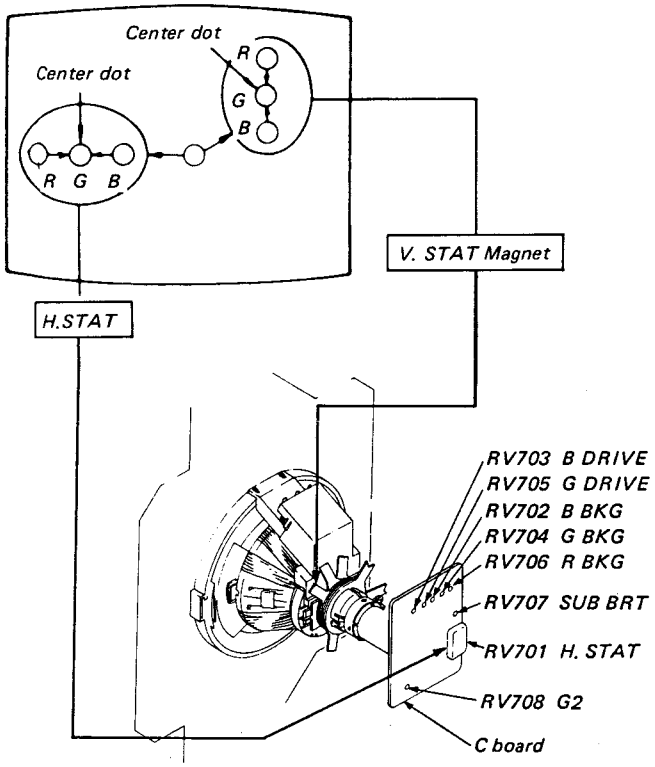
Fig. 3-3.

3-2. CONVERGENCE

Preparation:

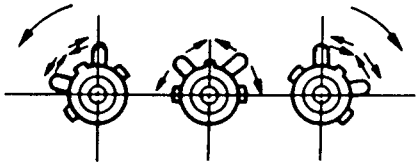
- Before starting, perform FOCUS, H. SIZE, V. SIZE and V. LIN adjustments.
- Set BRIGHTNESS control to fully counterclockwise.
- Feed in the dot pattern.

(1) Horizontal and Vertical Static Convergence

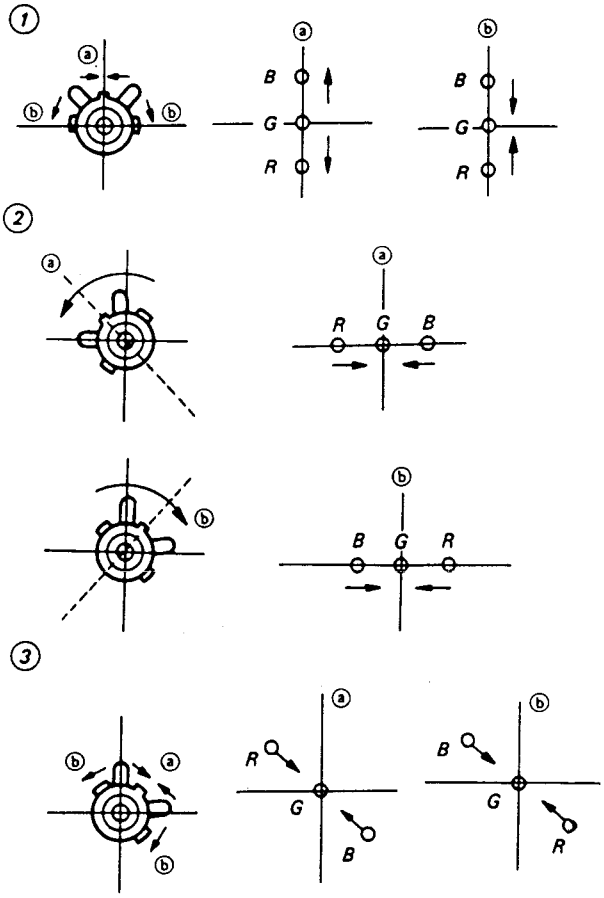


1. Adjust H. STAT VR to coincide red, green and blue dots on the center of screen (Horizontal movement)
2. Adjust V. STAT magnet to coincide red, green and blue dots on the center of screen (Vertical movement)
3. If the red, green and blue dots do not coincide on the center of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)

- Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.

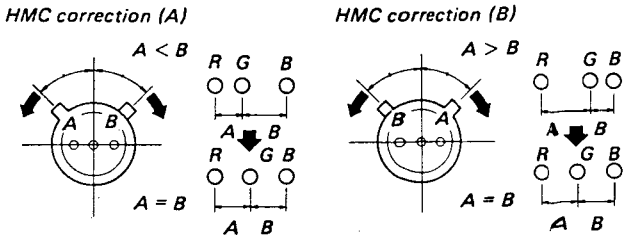


4. When the V. STAT magnet is moved in the direction of aroow ⓐ and ⓑ, Red, Green and Blue dots move as shown below.

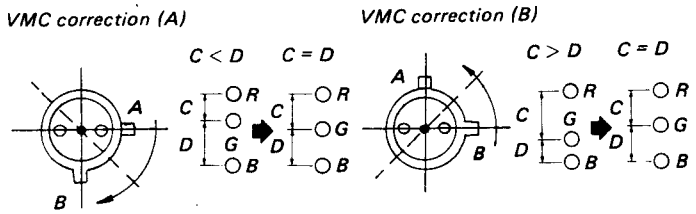


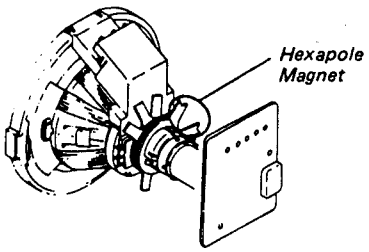
- **HMC and VMC correction for Hexapole Magnet.**

1. HMC (Horizontal, Mis, convergence) correction and motion of the Electron Beam with the Hexapole Magnet.



2. VMC (Vertical, Mis, convergence) correction and motion of the Electron Beam with the Hexapole Magnet.





(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown in Fig. 7.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

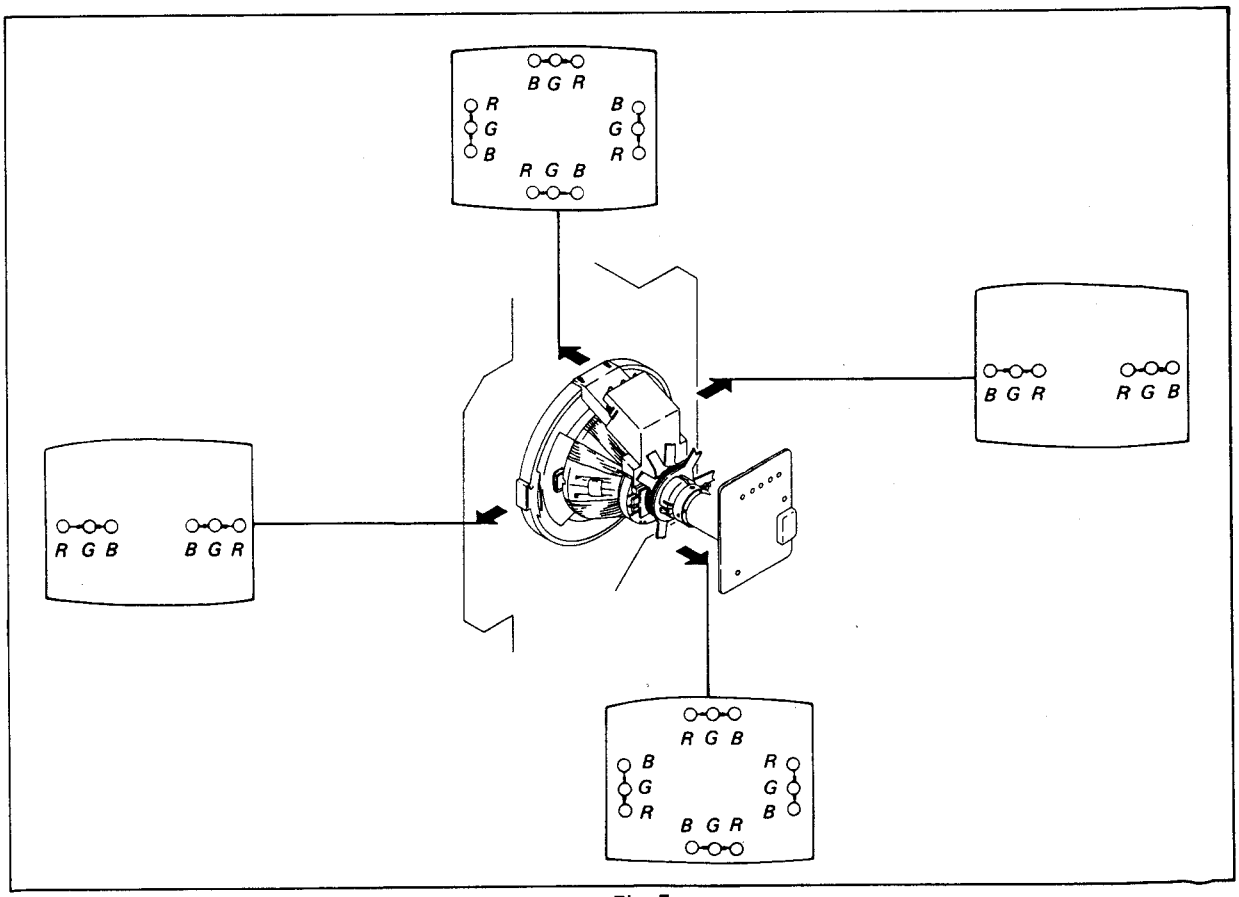
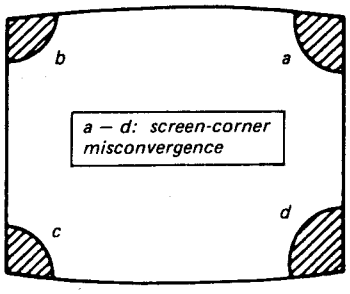
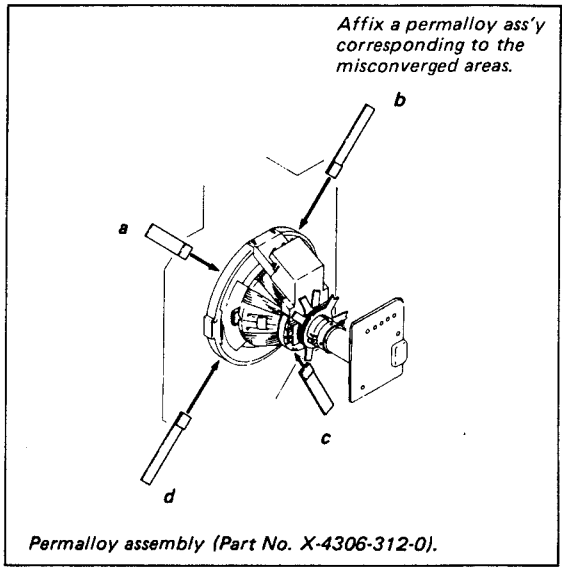


Fig. 7

(3) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.

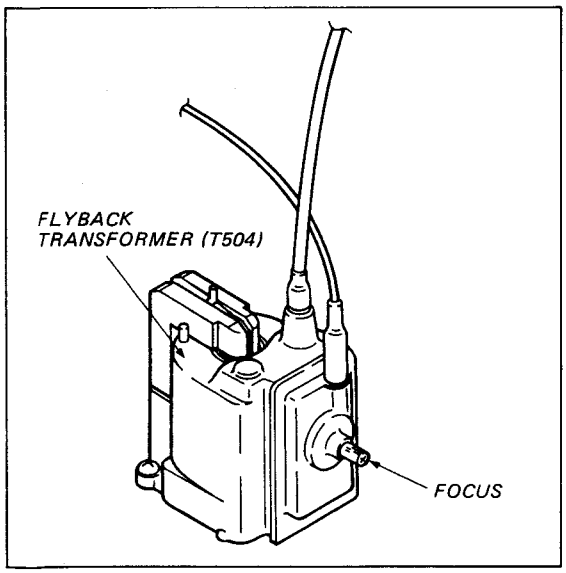


Fig. 15

3-4. WHITE BALANCE

Feed in the cross-hatch pattern.

1. Set the PICTURE and BRIGHT controls to minimum position (fully counterclockwise).
2. Turn B. DRIVE and G. DRIVE controls fully clockwise.
3. Set B. BKG, G. BKG and R. BKG controls to mechanical center.
4. Turn SCRN control slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning SCRN control. Do not turn a BKG control for this color.
5. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
6. Set the PICTURE and BRIGHTNESS controls to maximum position (fully clockwise).
   Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat Steps 1 through 6 several times.

H CENT ADJUSTMENT (A-18)

1. Receive a cross-hatch signal.
2. Set PICTURE and BRIGHT to normal.
3. Adjust H.CENT (H.CENT TAP = A-18) for best picture.

BALANCE ADJUSTMENT (RV291)

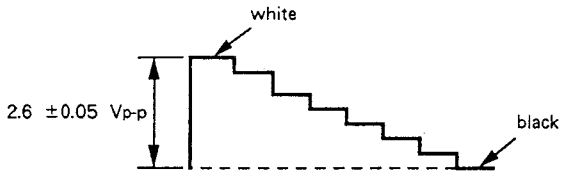
1. Receive 400 Hz (100 % modulation) sound signal.
2. Sound volume ····· 80 %
3. Connect an oscilloscope to the pin ① and pin ② of A-7 connector.
4. Adjust RV291 (BALANCE) to be the same level.

V.CENT ADJUSTMENT (S501)

1. Receive a cross-hatch signal.
2. Set PICTURE and BRIGHT to normal.
3. Adjust V.CENT (S501) and V.SIZE (RV507) for best picture.

SUB CONTRAST ADJUSTMENT (RV307)

1. Receive a color-bar signal.
   PICTURE ····· MAX
   BRIGHT ····· CENTER
   COLOR ····· MIN
   SHARP ····· MIN
2. Short circuit between Base of Q354 and 9.3V Line with a jumper wire.
3. Draw A-8 connector. (Short circuit R352.)
4. Connect an oscilloscope to the pin ④ of A-8 connector (blue out).
5. Adjust RV307 (SUB CONT) so that voltage is 2.6 ± 0.05 Vp-p.

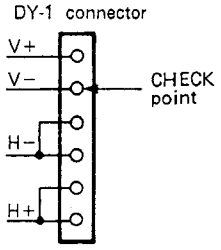


H.RREQ ADJUSTMENT (RV501)

1. Receive an off-air signal.
2. Short circuit between pin ㊽ of IC301 (H IN) and pin ㊾ of IC301 (Vcc 2) with a jumper wire.
3. Connect the frequency counter across Base of Q550 and ground.
4. Adjust RV501 for 15,734 kHz ± 50 Hz on the frequency counter.
5. Disconnect a jumper wire from IC301.

V.FREQ ADJUSTMENT (RV502)

1. Receive an off-air signal.
2. Short circuit between pin ㊼ of IC301 (V IN) and pin ㊾ of IC301 (Vcc 2) with a jumper wire.
3. Connect the frequency counter across DY-1 connecto (V.DY ⊖) and ground.
4. Adjust RV502 for 55.0 ± 0.3 Hz on the frequency counter.
5. Disconnect a jumper wire from IC301.



CHARACTER POSITION (T101)

1. Receive a color-bar signal.
2. Set the PICTURE control to maximum setting and se the BRIGHT control to center click position.
3. Press the PICTURE control button until this picture leve becomes maximum.
4. Ajust T101 as shown in Fig. 1.

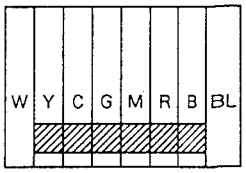


Fig. 1

PICTURE BLANKING CONFIRMATION

The following adjustments should always be performed wher replacing the following components.
Regarding components of ※R388.
IC301, D506, R341, R344, R378, R379, R380, R382, R383 PM501

1. Connect the variable auto-tranceformer to AC line anc turn the POWER switch ON.
2. Receive monoscope signal.
3. Set the PICTURE control in to 80 % and the BRIGHT control to center click position.
4. Connect the digital voltmeter to TP91 (135V : A-14 connector).
5. Connect the AC voltmeter to A-10 connector.
6. Slowly decrease the AC power supply voltage by th variable auto-transformer and confirm that the pictur is blanked when the voltage at TP91 is more than 107.9 Vdc.

V.SIZE CONFIRMATION

The following adjustments should always be performed when replacing the following components.
Regarding components of ※R555 (V.SIZE).
DY, IC301, R514, R515, R555, R556, T504, RV507

1. Turn the POWER switch ON, and receive monoscope signal.
2. Set the PICTURE control in to 80% and the BRIGHT control to center click position.
3. Adjust RV507 (V.SIZE) so that the V.SIZE becomes minimum, and confirm that the raster size is 29 cm or more.

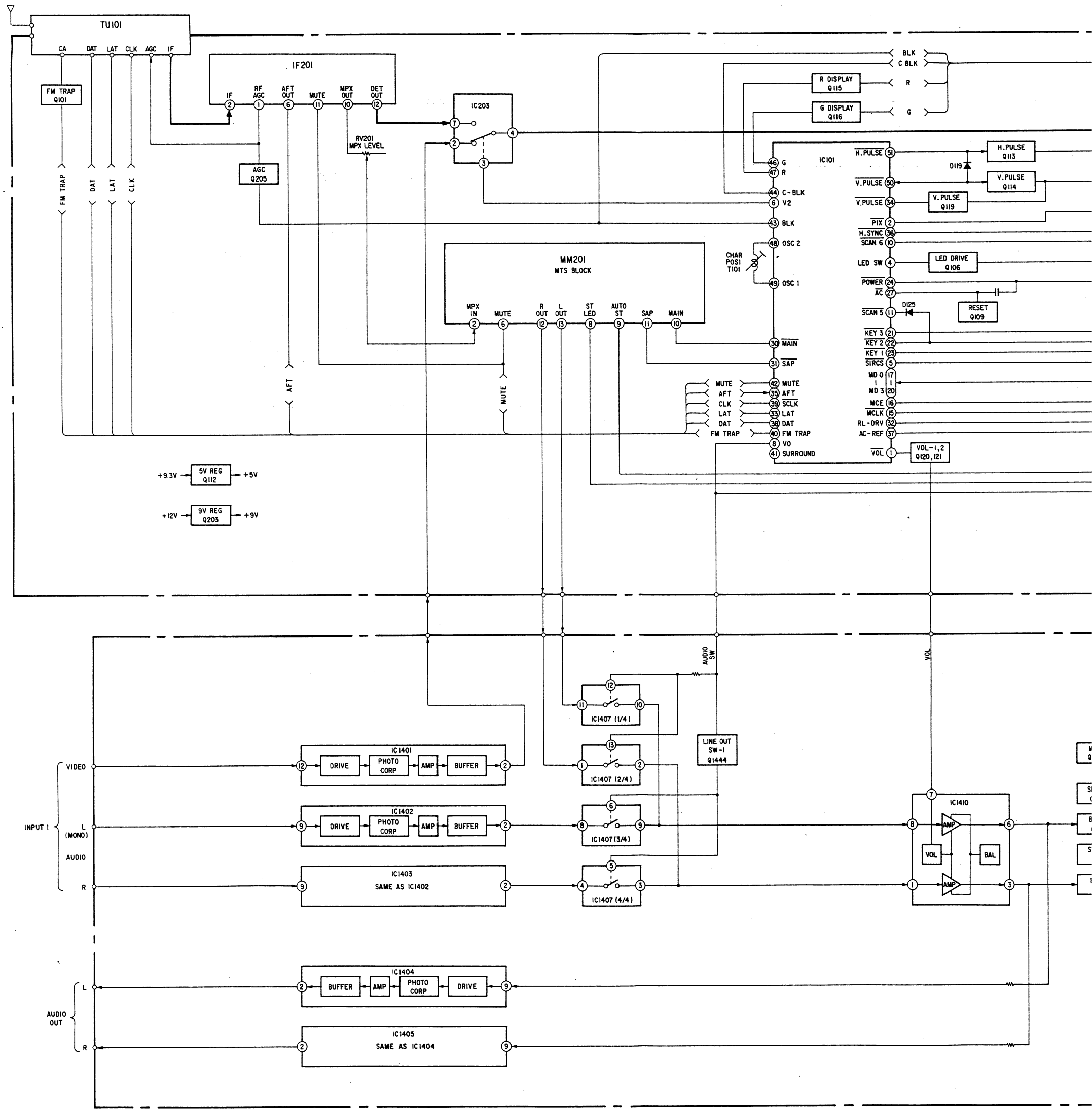
H.SIZE CONFIRMATION

The following adjustments should always be performed when replacing the following components.
Regarding components of ※R551 (H.SIZE).
DY, C563, C565, R551, R554, R578, T504, RV506

1. Turn the POWER switch ON, and receive monoscope signal.
2. Set the PICTURE control in to 80% and the BRIGHT control to center click position.
3. Confirm that the H.SIZE at minimum should not exceed 16.4 frames by adjusting RV506 (H.SIZE).

SECTION 6
DIAGRAMS

6-1 BLOCK DIAGRAM



BLK
C BLK
R
G

VIDEO
H.PULSE
V.PULSE
V.C
H.SYNC
BLK

H.PULSE Q113
D119
V.PULSE Q114
V.PULSE Q119
PIC-1 Q122
PIC BUFFER Q371
LED DRIVE Q106
RESET Q109
D125

MD0 – MD3
D112
D113
D114
D191
4 – 7
IC102 MEMORY

VOL-1,2 Q120,121
VOL

S3 S0 S1 K1 K2 K3 POW COM
S1 S2 K2 K1 K0 CATV
S801-805,806,808
S809-811
D804
S814
IC801 DETECTOR
SIRCS
TI
SL
ST
D801-803
ST LED SW Q108
RV801 HUE
RV802 COL
RV804 SHP
RV803 BRT
M1
M2
S813-814
AUTO STEREO
SP SW

S/S OUT
SAW
HP
VIDEO BLK
HUE
COL SHP
BRT
HD
D506

MUTE-1,2 Q1439,1445
SP SW-2 Q1443
BUFF-7 Q1442
SP SW-1 Q1441
BUFF-6 Q1440
IC1410
AMP
VOL
BAL
AMP

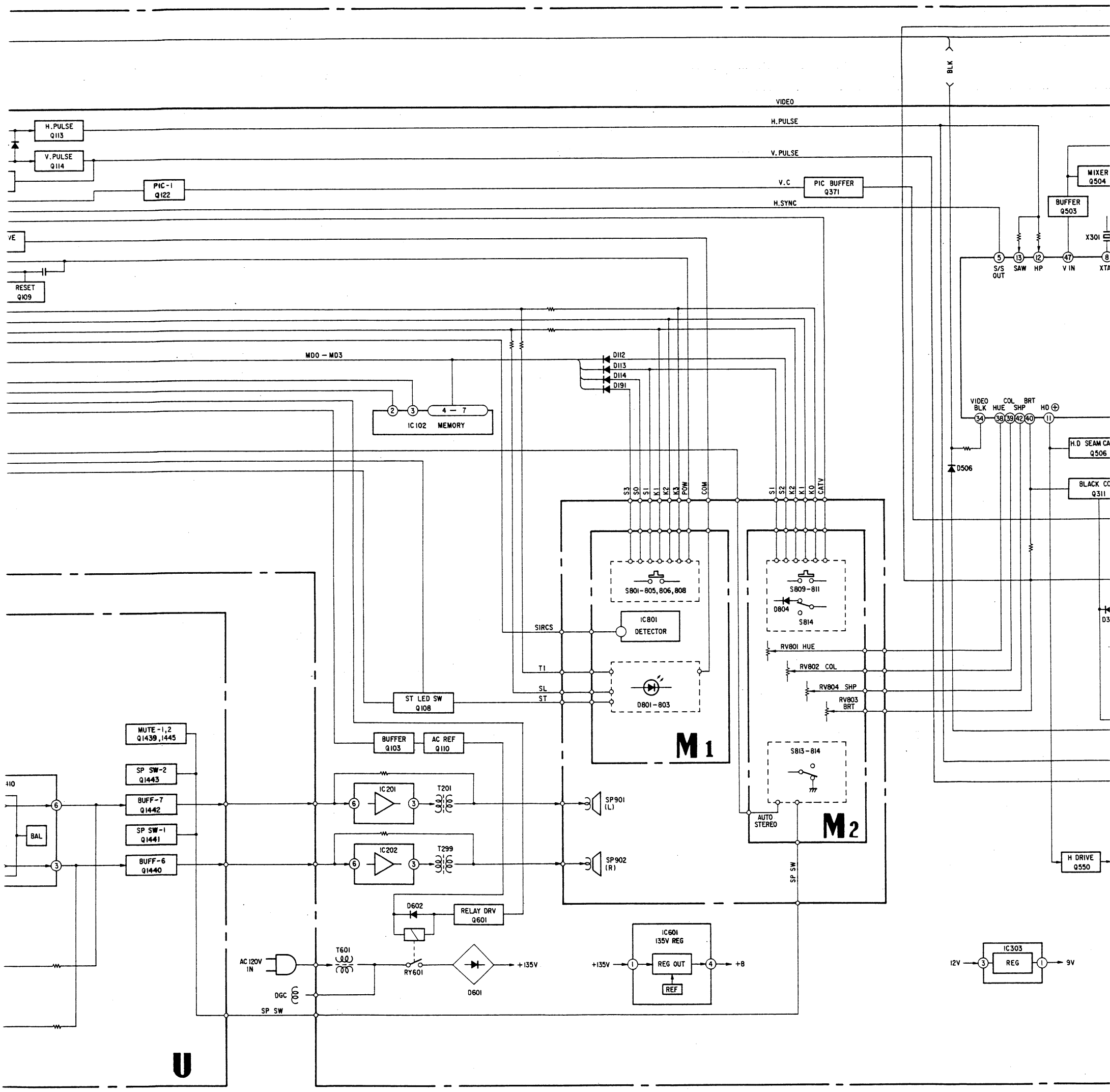
BUFFER Q103
AC REF Q110
IC201
T201
IC202
T299
SP901 (L)
SP902 (R)

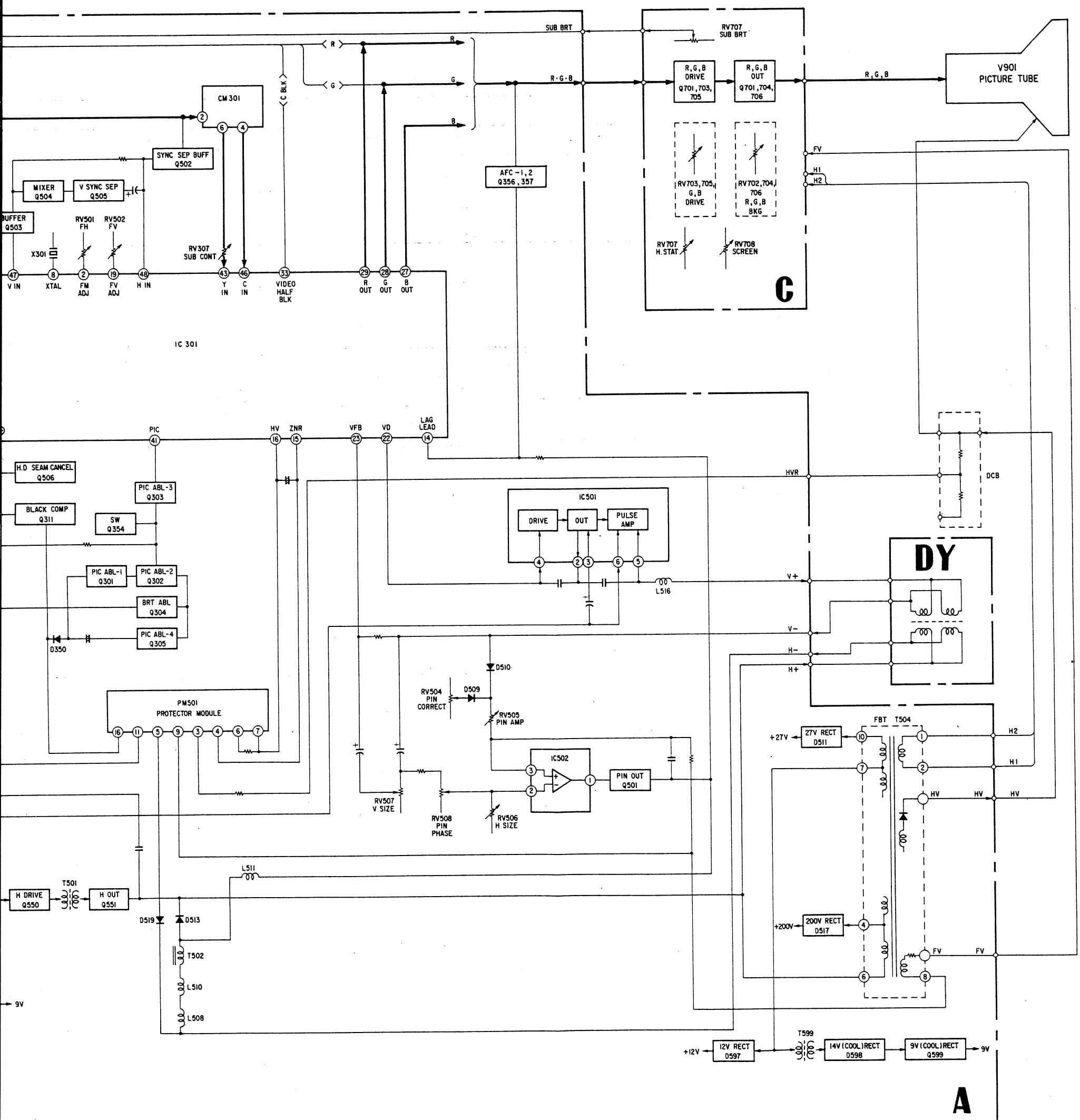
D602
RELAY DRV Q601
AC 120V IN
T601
RY601
D601
+135V
DGC
SP SW

IC601 135V REG
+135V
REG OUT
REF
+8

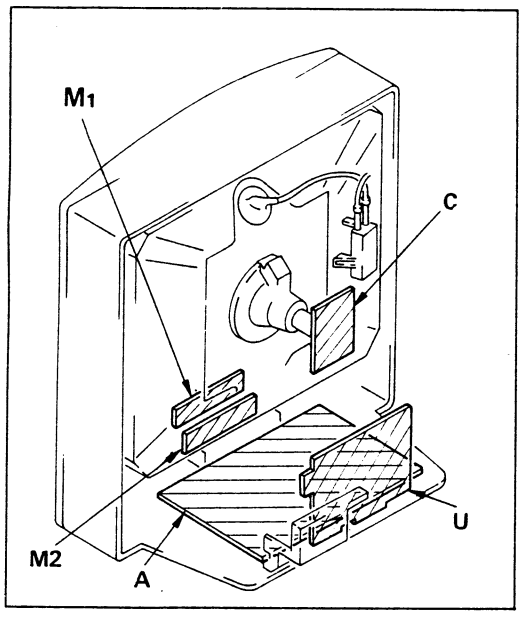
IC303
12V
REG

U


H.PULSE Q113
V.PULSE Q114
PIC-1 Q122
RESET Q109
VIDEO
H.PULSE
V.PULSE
V.C
H.SYNC
PIC BUFFER Q371
MIXER Q504
BUFFER Q503
X301
S/S OUT
SAW
HP
V IN
XTA
MD0 – MD3
D112
D113
D114
D191
IC102 MEMORY
VIDEO BLK
HUE
COL
SHP
BRT
HD
H.D SEAM CA Q506
D506
BLACK CO Q311
S3
S0
S1
K1
K2
K3
POW
COM
S1
S2
K2
K1
K0
CATV
S801-805,806,808
S809-811
D804
S814
IC801 DETECTOR
SIRCS
TI
SL
ST
D801-803
RV801 HUE
RV802 COL
RV804 SHP
RV803 BRT
ST LED SW Q108
M1
S813-814
AUTO STEREO
M2
SP SW
MUTE-1,2 Q1439,1445
SP SW-2 Q1443
BUFF-7 Q1442
SP SW-1 Q1441
BUFF-6 Q1440
BAL
BUFFER Q103
AC REF Q110
IC201
T201
IC202
T299
SP901 (L)
SP902 (R)
D602
RELAY DRV Q601
AC 120V IN
T601
RY601
D601
+135V
DGC
SP SW
IC601 135V REG
REG OUT
REF
+B
IC303
REG
12V
9V
H DRIVE Q550
U


SUB BRT
RV707 SUB BRT
R
G
B
R-G-B
R,G,B DRIVE Q701,703,705
R,G,B OUT Q701,704,706
R,G,B
V901 PICTURE TUBE
C BLK
CM 301
SYNC SEP BUFF Q502
MIXER Q504
V SYNC SEP Q505
BUFFER Q503
X301
RV501 FH
RV502 FV
RV307 SUB CONT
AFC-1,2 Q356,357
RV703,705,G,B DRIVE
RV702,704,706 R,G,B BKG
RV707 H.STAT
RV708 SCREEN
C
FV
H1
H2
V IN
XTAL
FM ADJ
FV ADJ
H IN
Y IN
C IN
VIDEO HALF BLK
R OUT
G OUT
B OUT
IC 301
PIC
HV
ZNR
VFB
VD
LAG LEAD
H.D SEAM CANCEL Q506
PIC ABL-3 Q303
BLACK COMP Q311
SW Q354
PIC ABL-1 Q301
PIC ABL-2 Q302
BRT ABL Q304
PIC ABL-4 Q305
D350
IC501
DRIVE
OUT
PULSE AMP
L516
HVR
DCB
V+
V-
H-
H+
DY
PM501 PROTECTOR MODULE
D510
RV504 PIN CORRECT
D509
RV505 PIN AMP
IC502
PIN OUT Q501
RV507 V SIZE
RV508 PIN PHASE
RV506 H SIZE
FBT T504
+27V
27V RECT D511
HV
+200V
200V RECT D517
FV
T501
H DRIVE Q550
H OUT Q551
L511
D519
D513
T502
L510
L508
9V
T599
+12V
12V RECT D597
14V (COOL) RECT D598
9V (COOL) RECT Q599
A

6-2. CIRCUIT BOARDS LOCATION



Note:

- All capacitors are in μF unless otherwise noted. pF: μμf 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : adjustment for repair.
- Indication of resistance, which does not have one for rating electrical power is as follows.

Pitch: 5 mm Rating electrical power: 1/4 W

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE WIREWOUND
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◢, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved. (Refer to R381 adjustment on Page 15, 16.) When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◢)	Adjustment (⊠)
IC301, PM501, R512, R381, R382, R378, R379, R344	R381 (HOLD DOWN)

- Voltages are dc with respect to ground unless otherwise noted.
- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- ▬▬ : B+ bus.
- The hold down check point is pin 4 of A-14 connector.
- ┈┈ : signal path.

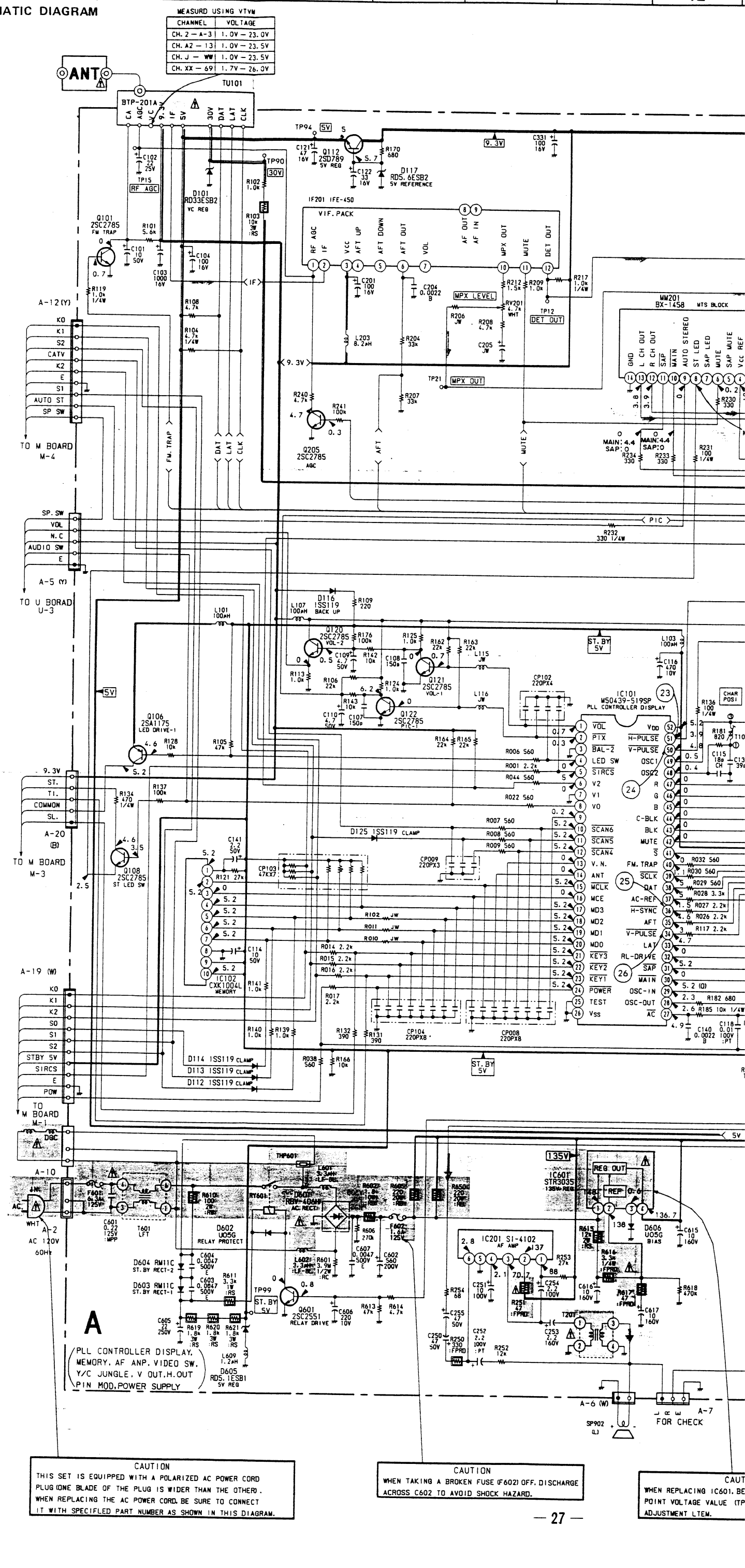
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Pin assignment of connectors in as follows.

wider than others

6-3. SCHEMATIC DIAGRAM



CAUTION
THIS SET IS EQUIPPED WITH A POLARIZED AC POWER CORD PLUG (ONE BLADE OF THE PLUG IS WIDER THAN THE OTHER). WHEN REPLACING THE AC POWER CORD, BE SURE TO CONNECT IT WITH SPECIFIED PART NUMBER AS SHOWN IN THIS DIAGRAM.

CAUTION
WHEN TAKING A BROKEN FUSE (F602) OFF, DISCHARGE ACROSS C602 TO AVOID SHOCK HAZARD.

CAUT
WHEN REPLACING IC601, BE
POINT VOLTAGE VALUE (TP
ADJUSTMENT ITEM.

TO U BOARD U-4

TO U BOARD U-2

TO M BOARD M-5

WHEN REPL
HOLD DOWN
REFER TO

A-1 (R)

A-4 (R)

A-13 (B)

A-8 (W)

MONITOR (R)
MONITOR (L)
TV (R)
TV (L)
9.3V
MONITOR
SHP
BRT
COL
HUE
SUB-BRT

MUTE
DET OUT
TP12 DET OUT

MW201 BX-1458 MTS BLOCK
GND
L CH OUT
R CH OUT
SAP
MAIN
AUTO STEREO
ST LED
SAP LED
MUTE
SAP MUTE
Vcc REF
Vcc (9V)
MPX IN
GND

MAIN: 4.4
SAP: 0
MAIN: 6.5
SAP: 6.5

TP98 MTS9V

Q503 2SA1175 BUFFER
Q505 2SA1175 V SYNC SEP
Q504 2SC2785 MIXER
Q502 2SA1175 SYNC SEP BUFFER
Q203 2SD788 9V REG

IC203 CX20061 VIDEO SW
COMB FILTER
CM301

R
G
C. BLK
BLK

9.3V

+B BLK
SUB CONT
TP13 Y

135V
BLK
PIC

ST. BY 5V
L103 100mH

IC101 MS0439-S19SP PLL CONTROLLER DISPLAY
VOL
PTX
BAL-2
LED SW
SIRCS
V2
V1
VO
SCAN6
SCAN5
SCAN4
V. N.
ANT
MCLK
MCE
MD3
MD2
MD1
MDO
KEY3
KEY2
KEY1
POWER
TEST
Vss
VDD
H-PULSE
V-PULSE
OSC1
OSC2
R
G
B
C-BLK
BLK
MUTE
S
FM. TRAP
SCLK
DAT
AC-REF
H-SYNC
AFT
V-PULSE
LAT
RL-DRIVE
SAP
MAIN
OSC-IN
OSC-OUT
AC

CHAR POSI

D118 1SS119 HP CLAMP-1
Q113 2SA1175 H PULSE
D120 1SS119 HP CLAMP-2
D119 1SS119 VP ADD
Q114 2SC2785 V PULSE
D121 1SS119 HP ADD
Q115 2SC2785 R DISPLAY
Q116 2SC2785 G DISPLAY
D122 1SS119 R CLAMP
D123 1SS119 G CLAMP
Q103 2SC2785 BUFFER
Q119 2SC2785 V PULSE
Q109 2SA1175 RESET
D115 RD4.3ESB1 RESET
Q110 2SC2785 AC REF
D128 1SS119 CLAMP

H PULSE
V PULSE
R
G
C. BLK
BLK
MUTE
FM. TRAP
CLK
DAT
H. SYNC
AFT
LAT
RL-DRIVE

IC301 CXA1013AS Y CHROMA JUNGLE
TOT ADJ
FH ADJ
FSC
S/S OUT
X TAL
HD
H. P
SAW
LAG-LEAD
ZNR
VIDEO HALF BLK
H. V
HOLD DOWN
FV ADJ
H IN
V IN
C IN
BIAS
Y IN
SHP
PIC
BRT
COL
HUE
B. P. H.
D. C.
VIDEO BLK
B. G. OUT
BLK MUTE
R OUT

FH
RV501 100k
FV

Q506 2SC2785 H. D. SEAM CANCEL

IC303 NJM78M93D 9V REG
TP93 9.3V
TP92 12V

Q371 2SC2785 PIC BUFFER
Q311 2SC2785 BLACK CLAMP
Q302 2SC2785 PIC ABL-2
Q301 2SC2785 PIC ABL-1
D350 1SS119 CLAMP
D505 1SS119 BLK
D506 1SS119 +B BLK

PROTECTOR MODULE

H. DRIVE
H. PULSE

IC601 STR3035 135V REG
REG. OUT
REF
D606 U05G BIAS

IC202 SI-4102 AF AMP
BALANCE
RV291 330 WHT

Q550 2SC2688 H DRIVE
Q551 2SD1941 H OUT
T501 HDT
TP84 H. OUT
D512 ERC06-15S H OUTDAMPER
D513 ERC06-15S H OUT DAMPER
D514 ERD29-08J PIN DAMPER
DS19 ESIF H PROTECTOR

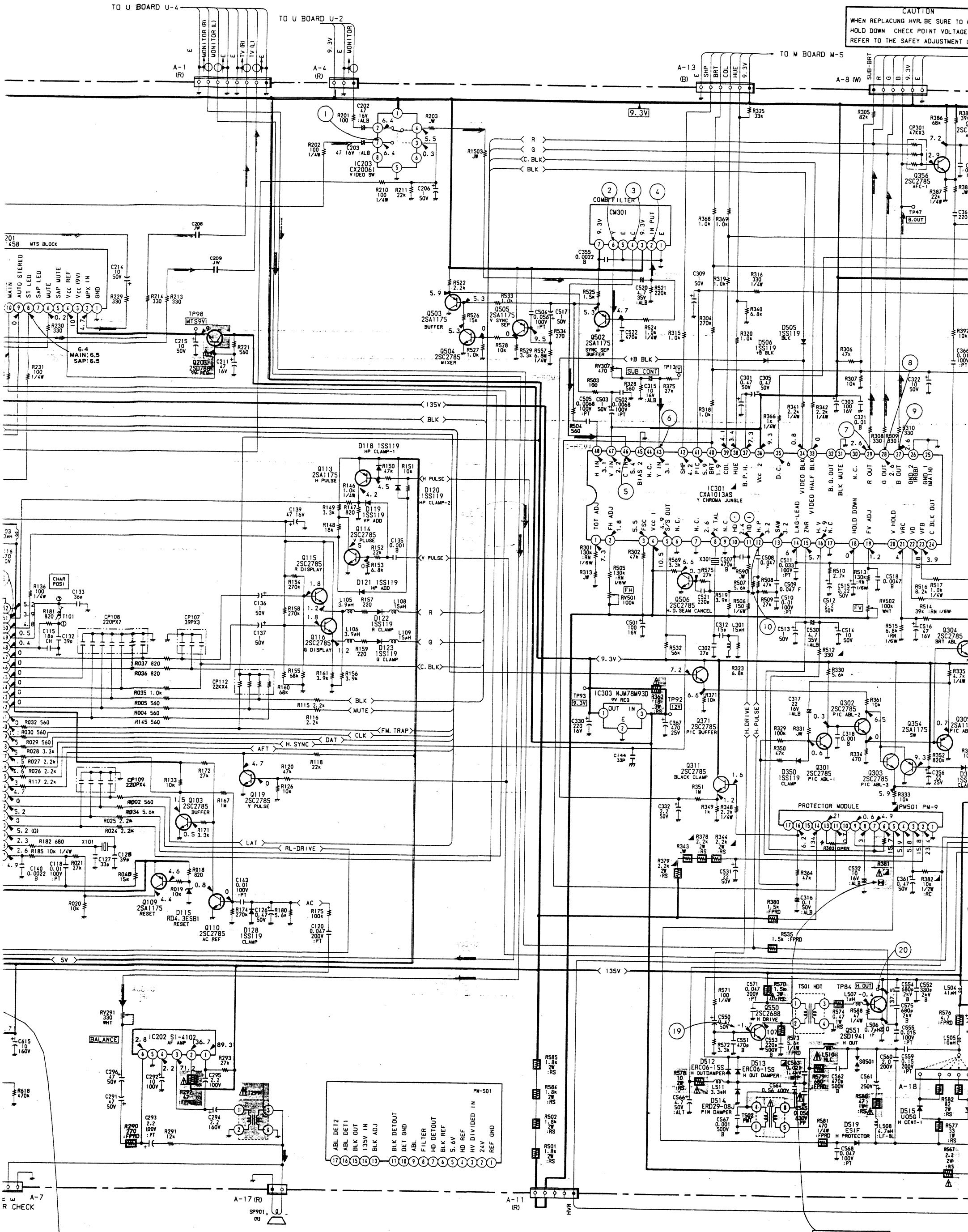
PM-501
ABL DET2
ABL DET1
BLK OUT
135V IN
BLK ADJ
BLK DETOUT
DET GND
ABL
FILTER
HD DETOUT
BLK REF
5.6V
HD REF
HV DIVIDED IN
24V
REF GND

A-6 (W)
A-7
FOR CHECK
SP902 (L)
A-17 (R)
SP901 (R)
A-11 (R)
HVR

: SEE PAGE 15-1

CAUTION
WHEN REPLACING IC601. BE SURE TO CHECK THE TEST POINT VOLTAGE VALUE (TP91). REFERTO THE SAFETY. ADJUSTMENT ITEM.

2) OFF. DISCHARGE
ZARD.



CAUTION
REPLACING IC601. BE SURE TO CHECK THE TEST
VOLTAGE VALUE (TP91). REFERTO THE SAFETY.
TMENT LTEM.

PICTURE TUBE

V901

A68JMT50X

KG KB G2 H CV KR G1 G4 HV

CAUTION
BE SURE TO CONNECT THE CONNECTOR C-1 FOR SAFETY.

C (R. G. B. OUT)

C-1 C-2 C-3 C-4

H. STAT SCREEN SCRN MIN MAX 230-809

SUB BRT R. BKG G. BKG B. BKG R. DRV G. DRV B. DRV

IC501 AN5521 V OUT

D508 U05G V BOOST

D509 1SS119 PIN CORRECT

D510 1SS119 PIN CORRECT

IC502 μPC4558C PIN MOD

Q501 2SD1585 PIN OUT

S501 V. CENT

RV506 H. SIZE

RV507 V. SIZE

RV508 PIN PHASE

PIN-AMP

Q706 2SC2611 R OUT

Q704 2SC2611 G OUT

Q702 2SC2611 B OUT

D703 1SS119 R PROTECTOR

D702 1SS119 G PROTECTOR

D701 1SS119 B PROTECTOR

Q705 2SC2785 R DRIVE

Q703 2SC2785 G DRIVE

Q701 2SC2785 B DRIVE

Q304 2SC2785 BRT ABL

Q305 2SA1175 PIC ABL-4

D351 1SS119 CLAMP

D516 U05G H CENT-2

D517 ERC24-06S 200V RECT

D518 ESIF 02 RECT

D597 RGP15G 12V RECT

D598 ERB43-08 14V RECT (COLD)

D599 RD10ESB2 9V REG (COLD)

D511 V19E 27V RECT

Q599 2SD789 9V REG (COLD)

L516 3.3μH :LF-8L

L501 82μH :LF-8L

L502 22μH :LF-8L

L503 JW

L504 47μH

L505 10μH

NL501

FBT T504

DY-1 V+ V- H- H+

DY SY-158

ADCB

TP91 135V

TP95 27V

TP96 200V

TP97 1000V (G2)

TP82 V. OUT

TP86 V. MID

TP92C COLD9V

TP85 H. PROTECTOR

H. PROT 27V E 135V A-14 FOR CHECK

F. V. H. V. H2 H1 E 200V 1000V (G2) A-9

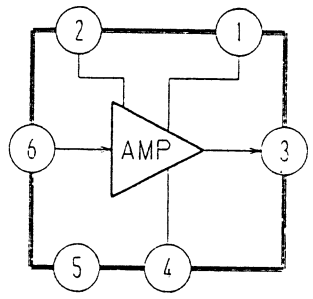
9V (COLD) GND A-3 (W) TO U BOARD U-5

COL E DC BRT 9.3V A-15 (W) FOR CHECK

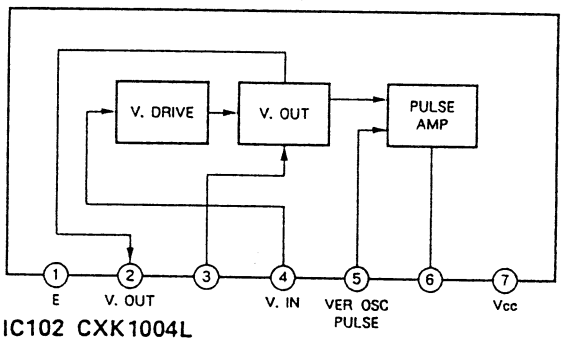
E 9.3V B G R SB C-3 (W)

C BLK OUT (MAIN)

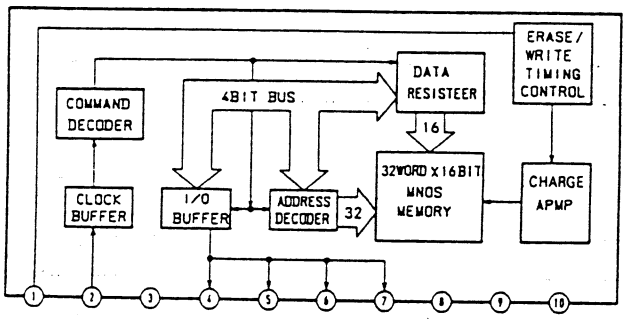
IC201, 202 SI4102



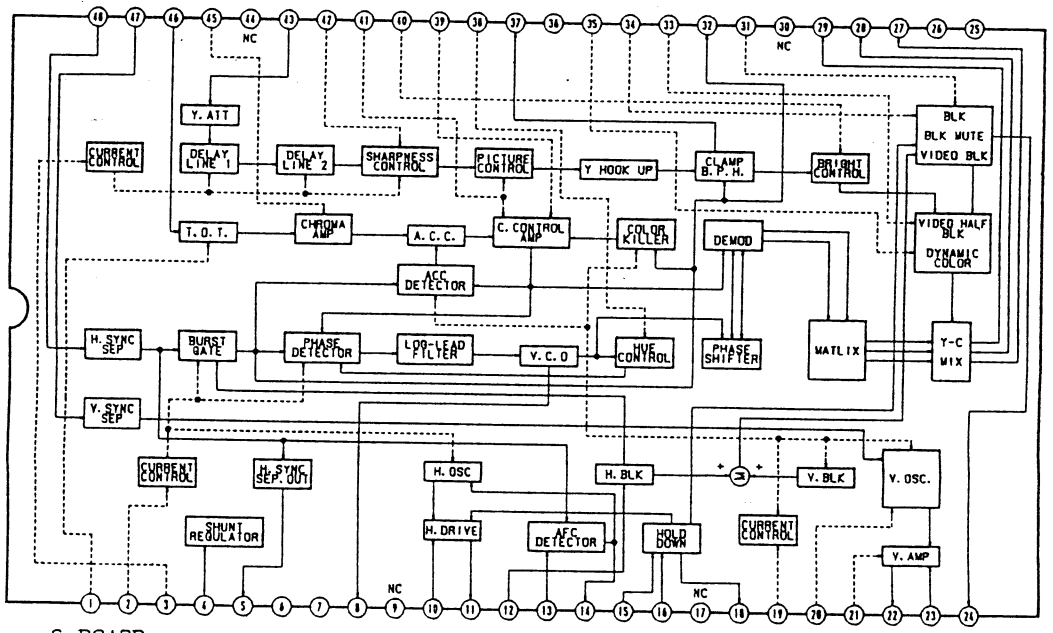
IC501 AN5521



IC102 CXK1004L



IC301 CXA1013AS



C BOARD

30	31	32	33
130 Vp-p (H)	110Vp-p (H)	110Vp-p (H)	30 Vp-p (V)

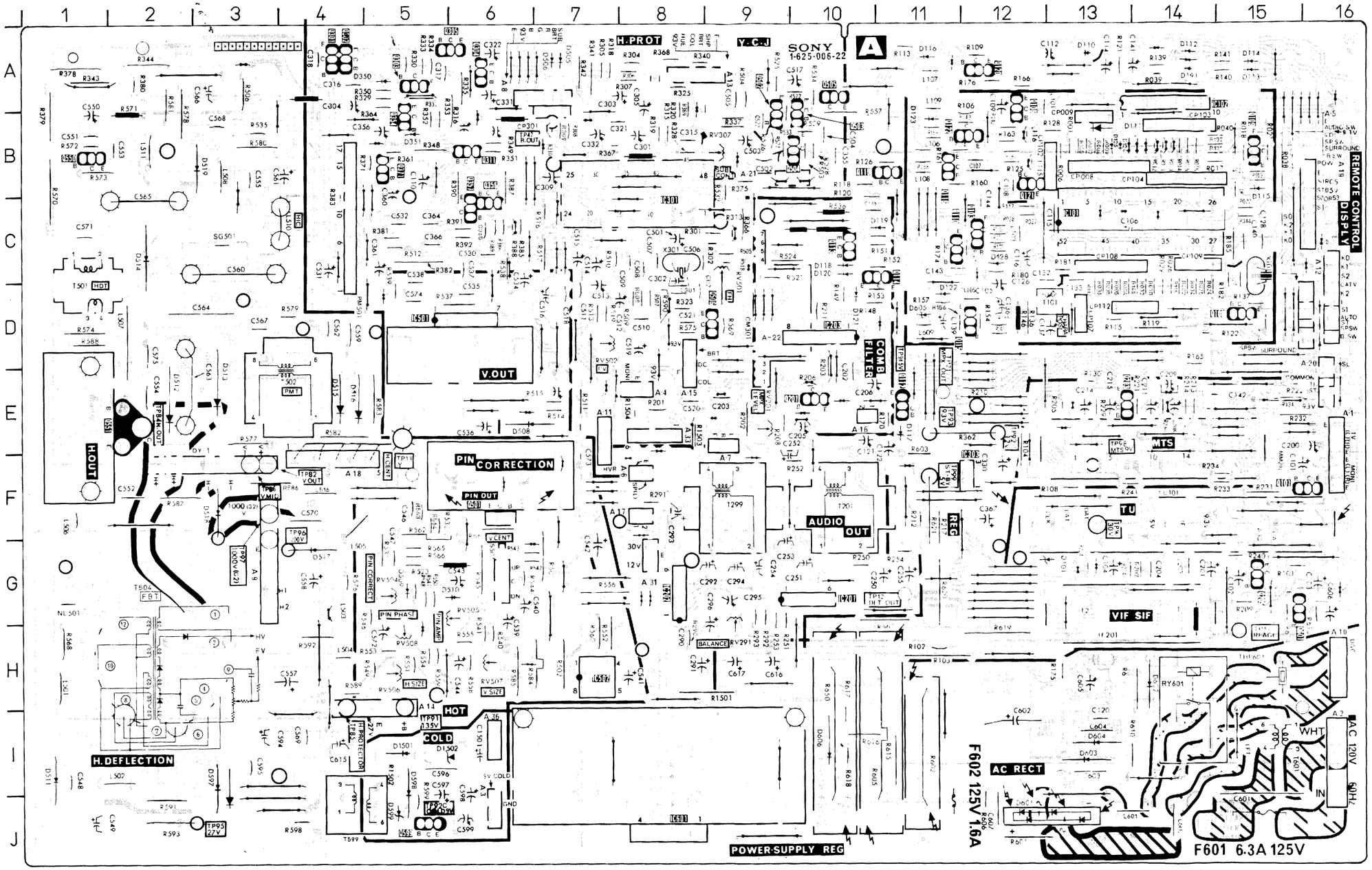
A BOARD

1 2Vp-p (H)	2 2Vp-p (H)	3 2Vp-p (H)	4 2Vp-p (H)	5 2Vp-p (H)
6 1.7 Vp-p (H)	7 5.0Vp-p (H)	8 4.9Vp-p (H)	9 5.0Vp-p (H)	10 1.8Vp-p (H)
11 28 Vp-p (V)	12 3.6Vp-p (V)	13 3.0 Vp-p (V)	14 56 Vp-p (V)	15 1.5Vp-p (V)
16 0.7Vp-p (V)	17 10 Vp-p (V)	18 18Vp-p (V)	19 4.0 Vp-p (H)	20 1100Vp-p (H)
21 150Vp-p (H)	22 10 Vp-p (V)	23 4.9Vp-p (H)	24 0.4Vp-p (V)	25 5Vp-p (V)
26 5 Vp-p (H)				

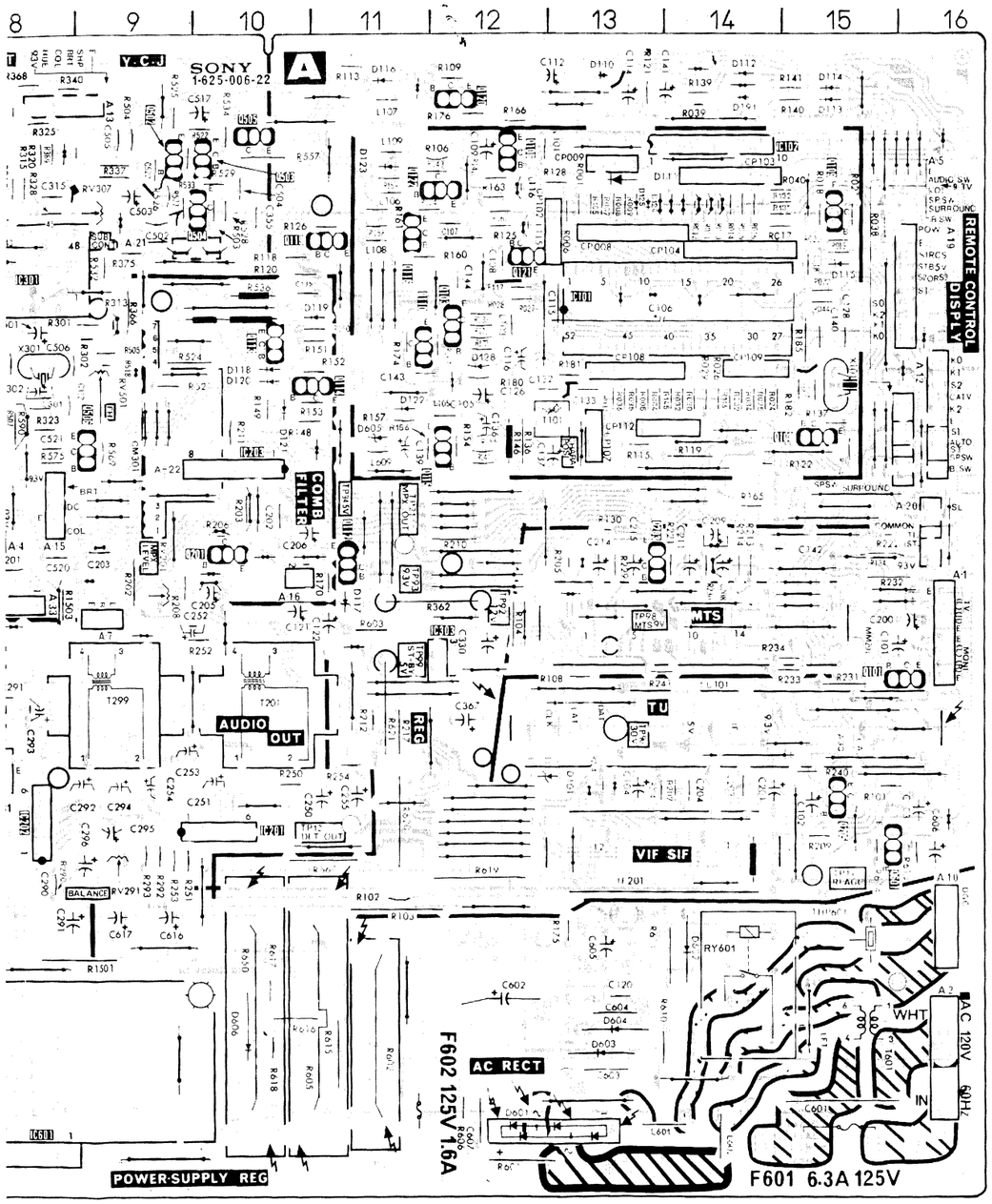
6-4. PRINTED WIRING BOARDS — *Conductor Side* —

A PLL CONTROLLER DISPLAY, MEMORY, AM AMP, VIDEO SW, Y/C JUNGLE, V OUT, PIN MDD, H OUT POWER SUPPLY

— A Board —



MORY,
SUPPLY

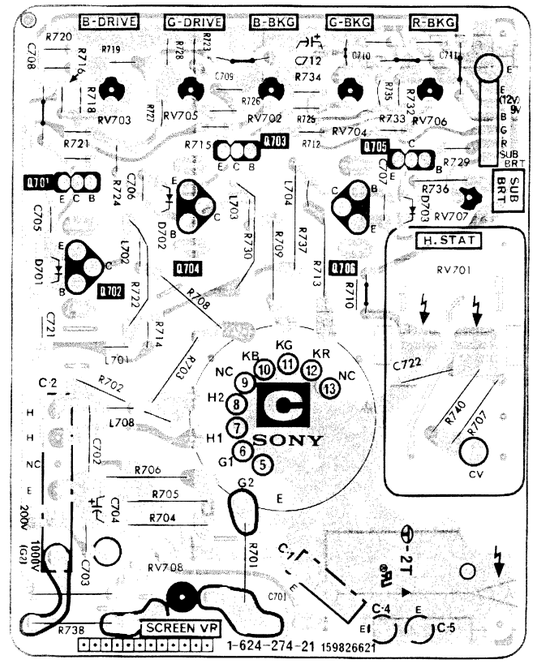


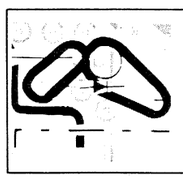
C [R·G·B OUT]

A Board

IC		DIODE		MODULE	
IC101	C-13	D101	G-13	MM201	F-15
IC102	A-14	D112	A-14	PM501	D-4
IC201	G-10	D113	A-15		
IC202	G-8	D114	A-15	TP	
IC203	D-10	D115	B-15		
IC301	C-8	D116	A-11	TP12	G-11
IC303	F-12	D117	E-11	TP13	F-5
IC501	D-5	D118	C-10	TP15	H-15
IC502	H-7	D119	C-11	TP21	E-11
IC601	J-8	D120	C-10	TP47	B-7
		D121	D-10	TP82	F-3
TRANSISTOR		D122	D-11	TP84	E-2
		D123	B-13	TP85	H-4
Q101	F-16	D124	B-13	TP86	F-3
Q103	C-12	D124	B-13	TP90	F-13
Q106	B-12	D125	B-13	TP91	H-5
Q108	D-15	D128	C-12	TP92	E-12
Q109	B-15	D350	A-5	TP92C	J-5
Q110	C-11	D351	B-5	TP93	E-11
Q112	E-11	D505	A-7	TP94	E-11
Q113	C-10	D506	A-7	TP95	J-3
Q114	C-11	D508	E-6	TP96	G-4
Q115	D-12	D509	G-5	TP97	F-3
Q116	B-11	D510	G-6	TP98	F-13
Q119	B-11	D511	I-1	TP99	F-11
Q120	A-12	D512	E-2		
Q121	B-12	D513	E-3		
Q122	B-12	D514	C-2		
Q203	E-13	D515	E-4		
Q205	G-15	D516	E-4		
Q301	A-4	D517	G-4		
Q302	A-4	D518	F-3		
Q303	A-5	D519	B-3		
Q304	A-6	D597	I-3		
Q305	A-6	D598	I-5		
Q311	B-6	D599	J-5		
Q354	B-5	D601	J-12		
Q356	C-6	D601	H-14		
Q357	C-6	D603	I-13		
Q371	B-5	D604	I-13		
Q501	F-6	D605	D-10		
Q502	A-9	D606	I-10		
Q503	B-10	VARIABLE RESISTOR			
Q504	B-10				
Q505	A-10	RV201	E-9		
Q506	D-9	RV291	H-9		
Q550	B-1	RV307	B-9		
Q551	E-2	RV501	C-9		
Q599	J-5	RV502	D-7		
Q601	G-15	RV504	G-5		
		RV505	G-6		
		RV506	H-5		
		RV507	H-6		
		RV508	H-5		

— C Board —

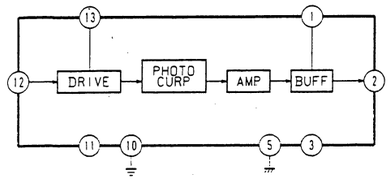




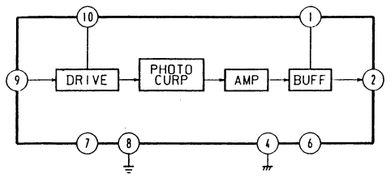
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

KV-27TS20
RM-757

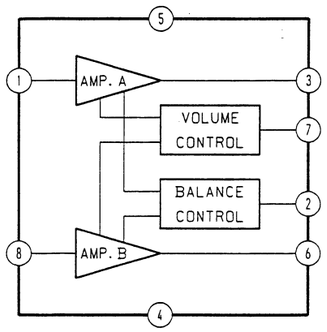
IC1401 IAV-1

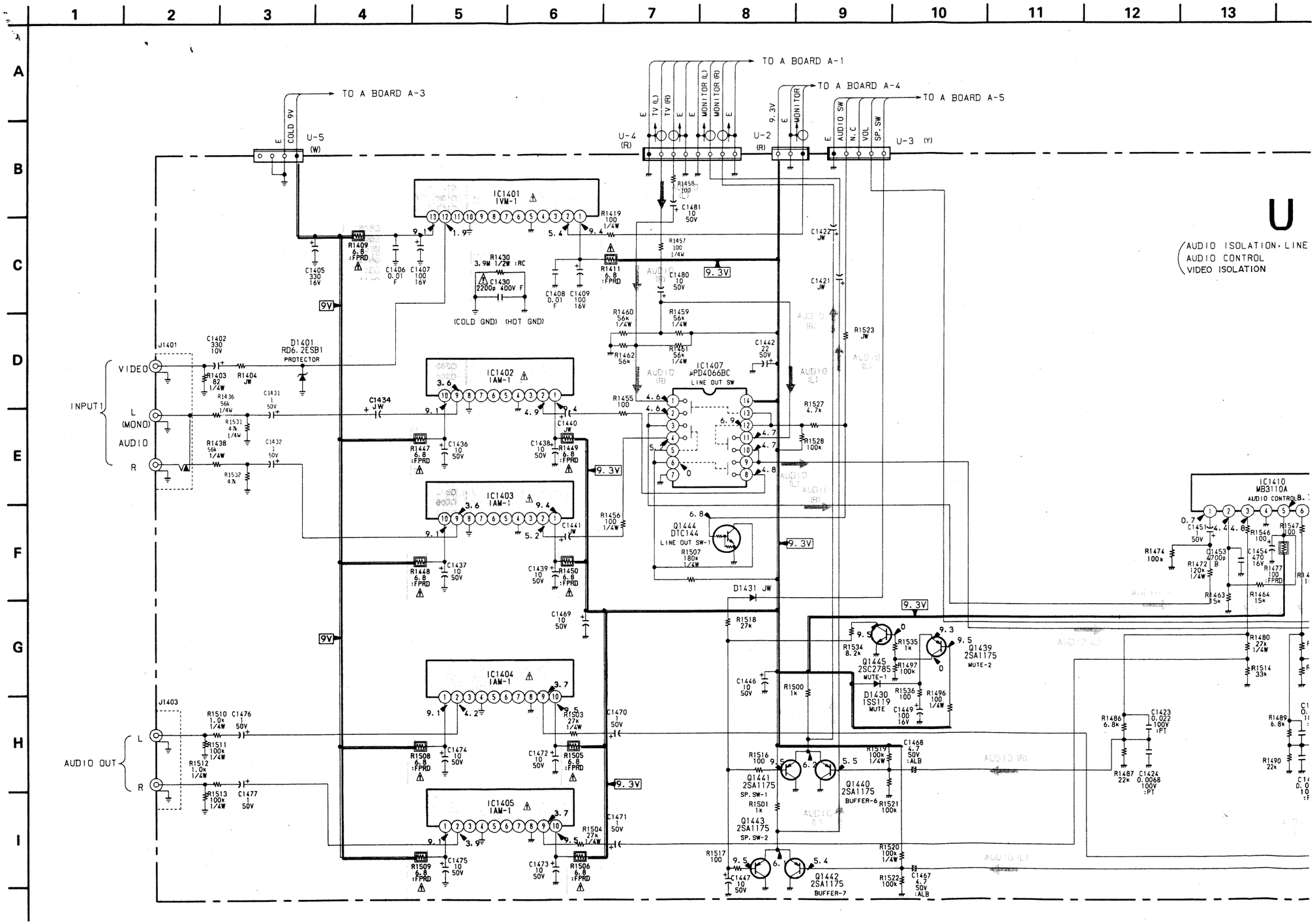


IC1402–1405 IAM-1



IC1410 MB3110A





5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I

TO A BOARD A-1
TO A BOARD A-4
TO A BOARD A-5
U-4 (R)
U-2 (R)
U-3 (Y)
TV (L)
TV (R)
MONITOR (L)
MONITOR (R)
9.3V
MONITOR
AUDIO SW
N.C
VOL
SP. SW

IC1401 IVM-1
IC1402 IAM-1
IC1403 IAM-1
IC1404 IAM-1
IC1405 IAM-1
IC1407 μPD4066BC LINE OUT SW
IC1410 MB3110A AUDIO CONTROL
Q1444 DTC144 LINE OUT SW-1
Q1441 2SA1175 SP. SW-1
Q1443 2SA1175 SP. SW-2
Q1445 2SC2785 MUTE-1
Q1439 2SA1175 MUTE-2
Q1440 2SA1175 BUFFER-6
Q1442 2SA1175 BUFFER-7
D1430 1SS119 MUTE
D1431 JW
(COLD GND) (HOT GND)

U

(AUDIO ISOLATION, LINE OUT SW,
AUDIO CONTROL
VIDEO ISOLATION)

TO A BOARD A-19
TO A BOARD A-20
M-1 (W)
M-3 (B)
K0
K1
K2
S0
S1
S2
STBY 5V
SIRCS
E
POW
5V
S801 TV/VIDEO
S802 CH DN
S803 CH UP
S804 VOL DN
S805 VOL UP
S806 TIMER
S808 POW
DETECTOR
IC801 SBX-1483 DETECTOR
SL.
COMMON
T1
ST
9.3V
TIMER
STEREO
SLEEP
D801 SR108D TIMER LED
D802 SR108D STEREO LED
D803 SR108D SLEEP LED

M1

(REMOTE CONTROL
COSTOMER

TO A BOARD A-12
TO A BOARD A-13
M-4 (Y)
M-5 (B)
K0
K1
S2
CATV
K2
E
S1
AUTO ST
SP. SW
9.3V
HUE
COL
BRT
SHP
S809 PIC-
S810 PIC+
S811 MTS
S812
S813 AUTO-ST. SW
S814 SP. SW
D804 1SS119 CATV SW
RV801 20k HUE
RV802 20k COL
RV803 20k BRT
RV804 20k SHP

M2

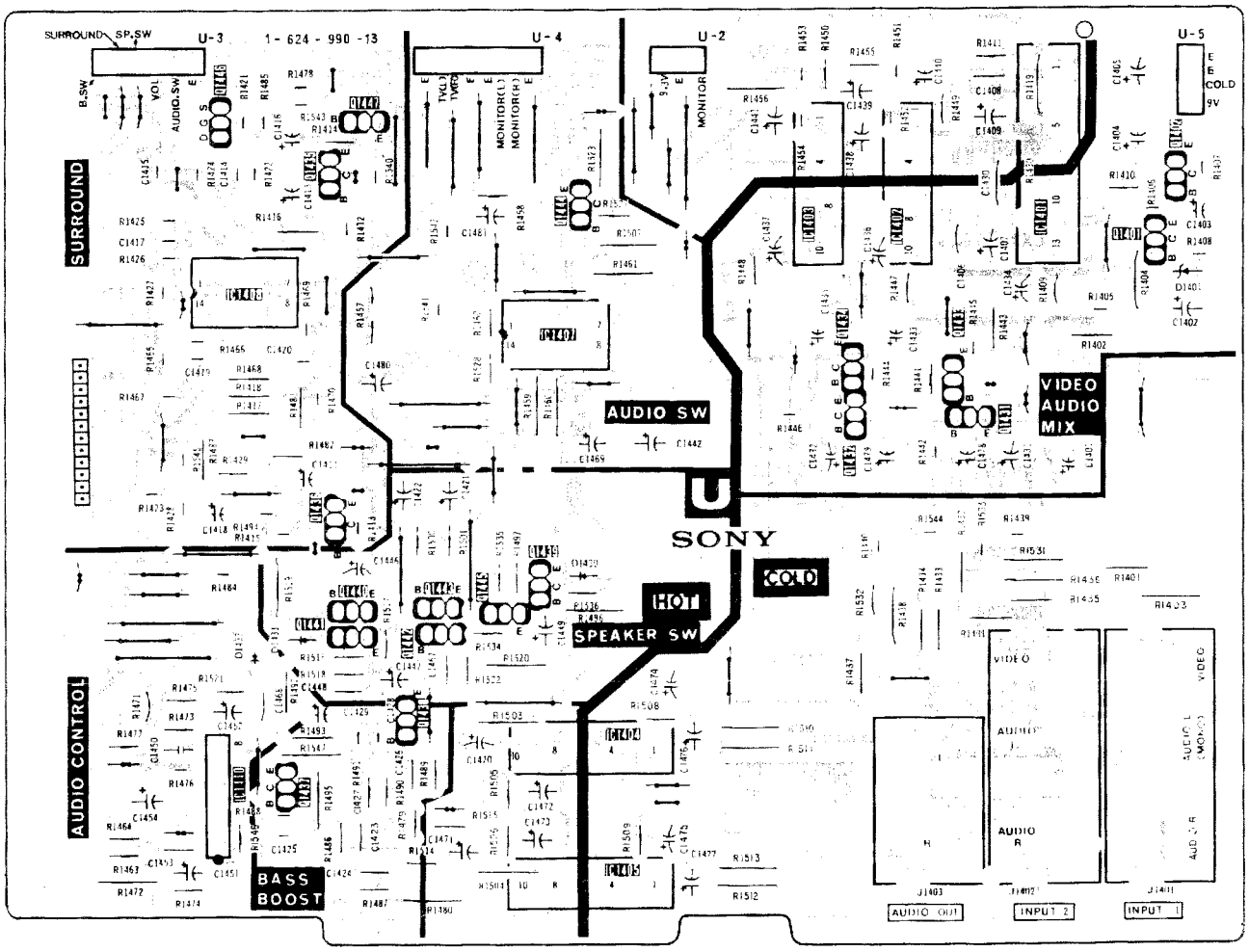
(CONTROL, CATV SW)

U [AUDIO ISOLATION, LINE SW, AUDIO CONTROL, VIDEO ISOLATION]

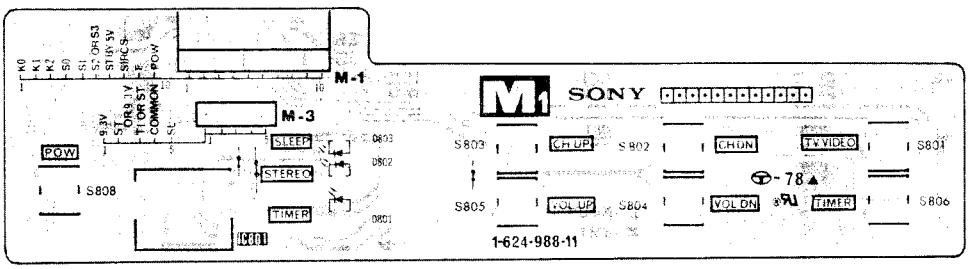
M1 [REMOTE CONTROL COSTOMER]

M2 [CONTROL CATV SW]

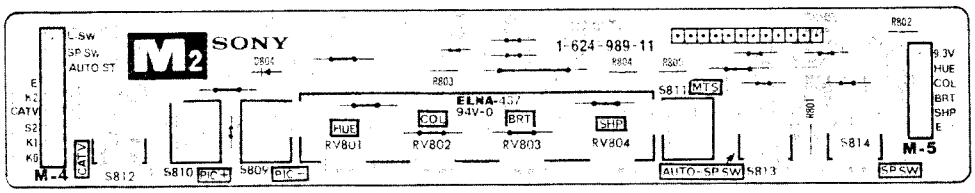
– U Board – *– Conductor Side –*



– M1 Board –



– M2 Board –

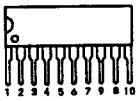


6-5. SEMICONDUCTORS

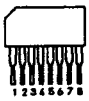
AN5521

CXA1013AS

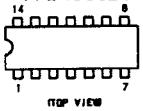
CXK1004L



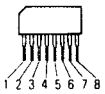
CX20061



HD14066BP
μPC324C
μPD4066BC

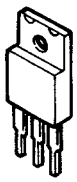


MB3110A

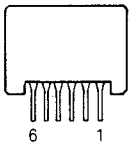


M50439-519SP

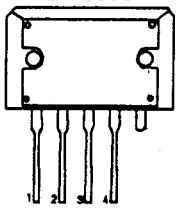
NJM78M93FD



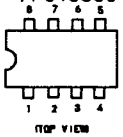
SI-4102



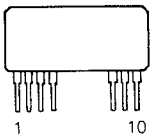
STR3035



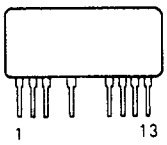
μPC4558C



IAM-1



IVM-1



DTC144ES

2SA1175
2SC2785

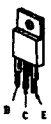
2SC1652

2SC2551

2SC2611
2SC2688

2SD788
2SD789

2SD1585-K

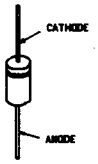


2SD1941-06

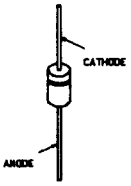
2SK105A-30

DAN209S
MC291

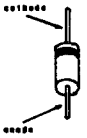
ERB43-04
ERB43-08
ES1F
RGP-01
RGP-15G
1S1555
10E2



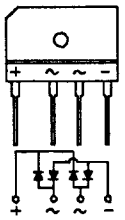
ERC24-06S



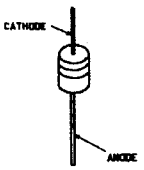
ERC06-15
ERD29-08J



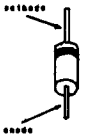
RBV-406H



RD4.3ES-B1
RD5.1ES-B1
RD5.6ES-B2
RD6.2ES-B1
RD10ES-B2
RD33ES-B2
1SS119
1SS113T
1SS148

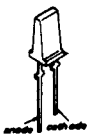


RM-11C

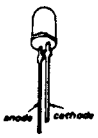


U05G
V19E
V19G

SEL1122P-N

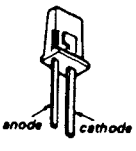


SE303AY



SLR-932A

SR632D-R



SECTION 7
EXPLODED VIEWS

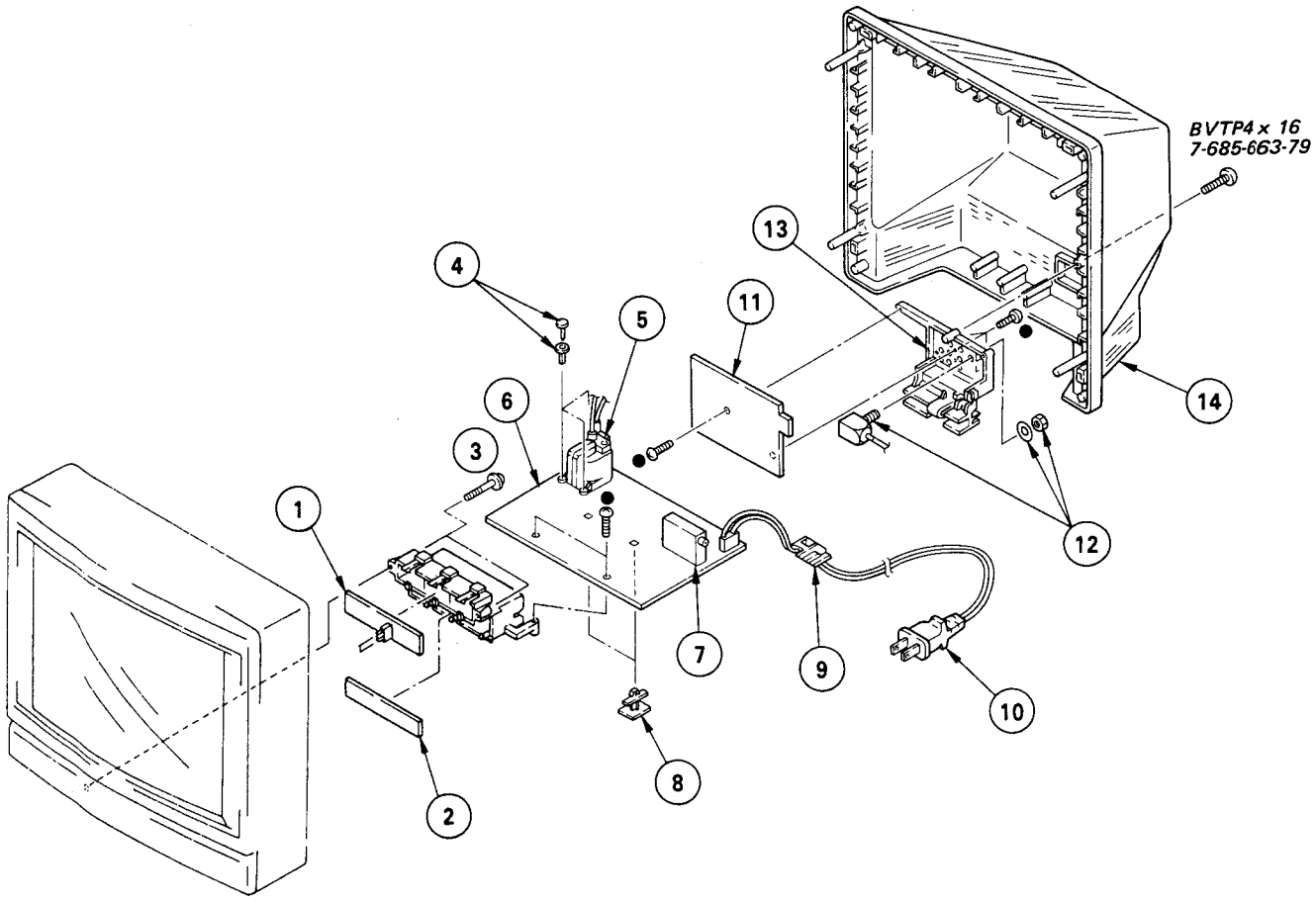
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

7-1. REAR COVER

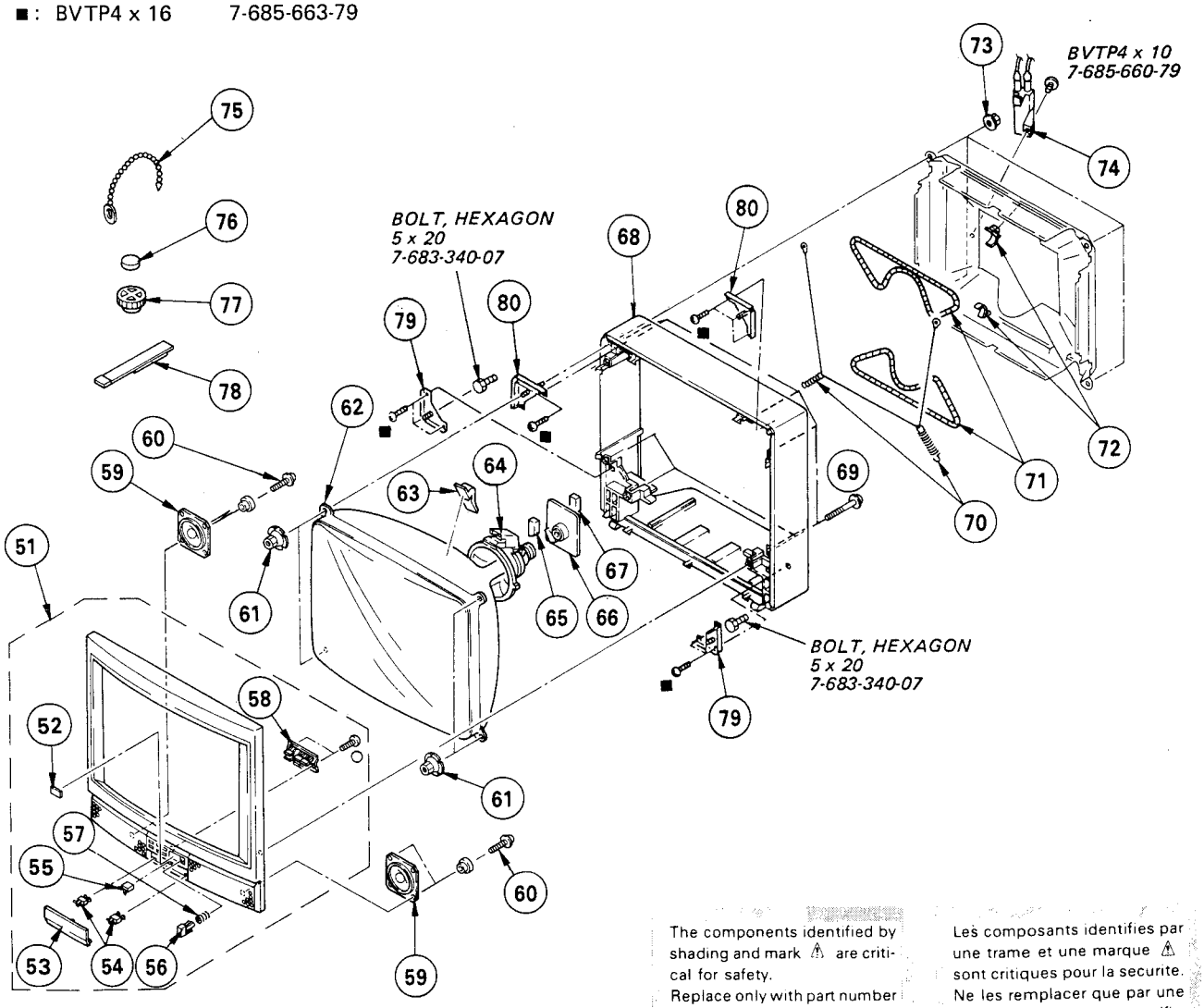
●: BVTP3 x 12 7-685-648-79



No.	Part No.	Description	Remark
1	*1-624-988-11	M1 BOARD	
2	*1-624-989-11	M2 BOARD	
3	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
4	3-531-576-31	RIVET (DIA. 3), NYLON	
5	⚠1-439-372-13	TRANSFORMER ASSY, FLYBACK	
6	*A-1296-397-A	A BOARD, COMPLETE	
7	⚠1-463-771-11	TUNER, ET (BTP-201A)	
8	*4-376-053-01	ANCHOR, PC BOARD	
9	⚠4-388-328-01	GROMMET, AC CORD	
10	⚠1-559-396-11	CORD, POWER	
11	*A-1394-132-A	U BOARD, COMPLETE	
12	⚠1-536-591-61	BLOCK, ANTENNA (USA ONLY)	
	⚠1-536-902-21	ANTENNA BLOCK (CND ONLY)	
13	4-388-413-01	TERMINAL BOARD, ANTENNA	
14	4-388-418-01	COVER, REAR	

7-2. PICTURE TUBE

○ : BVTP3 x 16 7-685-650-79
■ : BVTP4 x 16 7-685-663-79



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

No.	Part No.	Description	Remark
51	X-4388-493-1	BEZEL ASSY (FOR BLACK)	52-58
	X-4388-493-2	BEZEL ASSY (FOR TRADITIONAL OAK) (USA ONLY)	52-58
52	4-388-403-11	PLATE, TRANSPARENT	
53	4-388-409-01	DOOR, CONTROL	
54	3-703-035-11	SHAFT, LID	
55	4-386-710-01	CATCHER, PUSH	
56	4-388-407-01	BUTTON (B), POWER	
57	3-561-888-02	SPRING, COMPRESSION	
58	4-388-411-01	BUTTON (B), MULTI	
59	1-503-918-11	SPEAKER	
60	4-388-477-01	SCREW (3X16), TAPPING	
61	4-376-980-01	NUT, SPECIAL, PICTURE TUBE	
62	⚠.8-737-753-05	PICTURE TUBE (A68JMT50X)	
63	3-703-961-01	SPACER, DY	
64	⚠.1-451-275-11	DEFLECTION YOKE (SY-158)	

No.	Part No.	Description	Remark
65	*4-379-167-01	COVER (MAIN), CV	
66	*A-1330-838-A	C BOARD, COMPLETE	
67	*4-379-160-01	COVER (REAR LID), CV	
68	4-388-417-01	CABINET (FOR BLACK)	
	4-388-417-11	CABINET (TRADITIONAL OAK)(USA ONLY)	
	4-388-417-61	CABINET (WHITE)(USA ONLY)	
69	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
70	4-369-318-00	SPRING, TENSION	
71	⚠.1-426-350-11	COIL, DEMAGNETIZATION	
72	*4-371-629-01	STOPPER, WIRE	
73	4-306-034-00	FLANGE NUT,(B) 5MM	
74	⚠.1-230-940-31	RESISTOR ASSY, HIGH-VOLTAGE	
75	4-308-870-00	CLIP, LEAD WIRE	
76	1-452-032-00	MAGNET,DISK; 10MM ø	
77	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ø	
78	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	
79	*4-376-989-01	BRACKET (E), PICTURE TUBE	
80	*4-379-197-01	BRACKET (H), PICTURE TUBE	

A

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ▣ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ✱ : Selected to yield optimum performance.

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1296-397-A	A BOARD, COMPLETE **********	
	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
	*4-341-751-01	EYELET	
	*4-341-752-01	EYELET	
	*4-376-533-01	CASE (MAIN), SHIELD	
	*4-376-535-01	CASE (BOTTOM), SHIELD	
		<CONNECTOR>	
A1	*1-566-060-11	PIN, CONNECTOR 8P	
A2	*1-506-348-99	PIN, CONNECTOR 3P	
A3	*1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P	
A4	*1-566-055-11	PIN, CONNECTOR 3P	
A5	*1-566-057-11	PIN, CONNECTOR 5P	
A6	*1-566-054-11	PIN, CONNECTOR 2P	
A7	*1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	
A8	*1-566-058-11	PIN, CONNECTOR 6P	
A9	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
A10	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
A11	*1-566-057-11	PIN, CONNECTOR 5P	
A12	*1-566-061-11	PIN, CONNECTOR 9P	
A13	*1-566-058-11	PIN, CONNECTOR 6P	
A14	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P	
A15	*1-560-125-00	PLUG, CONNECTOR (2.5MM) 5P	
A17	*1-566-054-11	PIN, CONNECTOR 2P	
A19	*1-566-062-11	PIN, CONNECTOR 10P	
A20	*1-566-057-11	PIN, CONNECTOR 5P	
DY1	*1-564-038-00	CONNECTOR PLUG, DY (MINI) 6P	
		<CAPACITOR>	
C101	1-123-875-11	ELECT 10MF 20% 50V	
C102	1-126-233-11	ELECT 22MF 20% 25V	
C103	1-124-360-00	ELECT 1000MF 20% 16V	
C104	1-126-101-11	ELECT 100MF 20% 16V	
C107	1-101-361-00	CERAMIC 150PF 5% 50V	
C108	1-101-361-00	CERAMIC 150PF 5% 50V	
C109	1-124-927-11	ELECT 4.7MF 20% 50V	
C110	1-124-927-11	ELECT 4.7MF 20% 50V	
C114	1-123-875-11	ELECT 10MF 20% 50V	
C115	1-162-205-31	CERAMIC 18PF 5% 50V	
C116	1-124-472-11	ELECT 470MF 20% 10V	
C118	1-106-367-00	MYLAR 0.01MF 10% 100V	
C120	1-106-383-00	MYLAR 0.047MF 10% 200V	
C121	1-124-477-11	ELECT 47MF 20% 16V	
C122	1-124-963-11	ELECT 33MF 20% 16V	
C126	1-124-902-00	ELECT 0.47MF 20% 50V	
C127	1-102-963-00	CERAMIC 33PF 5% 50V	
C128	1-102-965-00	CERAMIC 39PF 5% 50V	
C132	1-102-965-00	CERAMIC 39PF 5% 50V	
C133	1-102-964-00	CERAMIC 36PF 5% 50V	
C135	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C136	1-124-499-11	ELECT 1MF 20% 50V	
C137	1-124-499-11	ELECT 1MF 20% 50V	
C139	1-124-477-11	ELECT 47MF 20% 16V	
C140	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C141	1-124-925-11	ELECT 2.2MF 20% 50V	
C143	1-106-367-00	MYLAR 0.01MF 10% 100V	
C144	1-102-963-00	CERAMIC 33PF 5% 50V	
C201	1-126-101-11	ELECT 100MF 20% 16V	
C202	1-124-631-11	ELECT 47MF 20% 16V	
C203	1-124-631-11	ELECT 47MF 20% 16V	
C204	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C206	1-124-499-11	ELECT 1MF 20% 50V	
C211	1-124-477-11	ELECT 47MF 20% 16V	
C214	1-123-875-11	ELECT 10MF 20% 50V	
C215	1-123-875-11	ELECT 10MF 20% 50V	
C250	1-124-910-11	ELECT 47MF 20% 50V	
C251	1-124-667-11	ELECT 10MF 20% 100V	
C252	1-124-925-11	ELECT 2.2MF 20% 100V	
C253	1-124-799-11	ELECT 2.2MF 20% 160V	
C254	1-124-925-11	ELECT 2.2MF 20% 100V	
C255	1-124-910-11	ELECT 47MF 20% 50V	
C291	1-124-910-11	ELECT 47MF 20% 50V	
C292	1-124-667-11	ELECT 10MF 20% 100V	
C293	1-124-925-11	ELECT 2.2MF 20% 100V	
C294	1-124-799-11	ELECT 2.2MF 20% 160V	
C295	1-124-925-11	ELECT 2.2MF 20% 100V	
C296	1-124-910-11	ELECT 47MF 20% 50V	
C301	1-124-902-00	ELECT 0.47MF 20% 50V	
C302	1-102-961-00	CERAMIC 27PF 5% 50V	
C303	1-126-101-11	ELECT 100MF 20% 16V	
C305	1-124-902-00	ELECT 0.47MF 20% 50V	
C309	1-124-499-11	ELECT 1MF 20% 50V	
C312	1-102-951-00	CERAMIC 15PF 5% 50V	
C315	1-126-320-11	ELECT 10MF 20% 16V	
C316	1-124-766-00	ELECT 0.1MF 20% 50V	
C317	1-124-282-00	ELECT 22MF 20% 16V	
C318	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C321	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C322	1-123-875-11	ELECT 10MF 20% 50V	
C330	1-124-120-11	ELECT 220MF 20% 16V	
C331	1-126-101-11	ELECT 100MF 20% 16V	
C332	1-124-925-11	ELECT 2.2MF 20% 50V	
C355	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C356	1-126-233-11	ELECT 22MF 20% 25V	
C361	1-124-902-00	ELECT 0.47MF 20% 50V	
C364	1-106-367-00	MYLAR 0.01MF 10% 100V	
C365	1-102-978-00	CERAMIC 220PF 5% 50V	
C366	1-106-367-00	MYLAR 0.01MF 10% 100V	
C367	1-124-480-11	ELECT 470MF 20% 25V	

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C501	1-126-101-11	ELECT	100MF	20%	16V
C502	1-106-363-00	MYLAR	0.0068MF	10%	100V
C503	1-124-499-11	ELECT	1MF	20%	50V
C504	1-106-385-00	MYLAR	0.056MF	10%	100V
C505	1-106-363-00	MYLAR	0.0068MF	10%	100V
C507	1-102-114-00	CERAMIC	470PF	10%	50V
C508	1-101-006-00	CERAMIC	0.047MF		50V
C509	1-101-006-00	CERAMIC	0.047MF		50V
C510	1-106-367-00	MYLAR	0.01MF	10%	100V
C511	1-106-379-12	MYLAR	0.033MF	10%	100V
C512	1-124-925-11	ELECT	2.2MF	20%	50V
C513	1-124-499-11	ELECT	1MF	20%	50V
C514	1-123-875-11	ELECT	10MF	20%	50V
C515	1-124-464-11	ELECT	0.22MF	20%	50V
C516	1-124-477-11	ELECT	47MF	20%	16V
C517	1-124-499-11	ELECT	1MF	20%	50V
C518	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C520	1-124-277-11	ELECT	4.7MF	20%	35V
C521	1-102-978-00	CERAMIC	220PF	5%	50V
C522	1-102-824-00	CERAMIC	470PF	5%	50V
C530	1-124-277-11	ELECT	4.7MF	20%	35V
C531	1-126-233-11	ELECT	22MF	20%	50V
C532	1-126-320-11	ELECT	10MF	20%	16V
C534	1-124-122-11	ELECT	100MF	20%	50V
C535	1-102-030-00	CERAMIC	330PF	10%	500V
C536	1-124-910-11	ELECT	47MF	20%	50V
C537	1-106-359-00	MYLAR	0.0047MF	10%	100V
C538	1-106-220-00	MYLAR	0.1MF	10%	100V
C539	1-123-382-00	ELECT	3.3MF	20%	50V
C540	1-123-875-11	ELECT	10MF	20%	50V
C541	1-124-910-11	ELECT	47MF	20%	50V
C542	1-124-517-11	ELECT	470MF	10%	50V
C543	1-123-875-11	ELECT	10MF	20%	50V
C544	1-124-927-11	ELECT	4.7MF	20%	50V
C546	1-106-343-00	MYLAR	0.001MF	10%	100V
C547	1-106-347-00	MYLAR	0.0015MF	10%	100V
C548	1-102-212-00	CERAMIC	820PF	10%	500V
C549	1-126-105-11	ELECT	1000MF	20%	35V
C550	1-124-902-00	ELECT	0.47MF	20%	50V
C551	1-102-114-00	CERAMIC	470PF	10%	50V
C552	1-162-115-00	CERAMIC	330PF	10%	2KV
C553	1-102-244-00	CERAMIC	220PF	10%	500V
C554	1-162-116-00	CERAMIC	680PF	10%	2KV
C555	1-106-371-00	MYLAR	0.015MF	10%	100V
C557	1-124-494-00	ELECT	33MF		160V
C558	1-123-947-00	ELECT	10MF	20%	250V
C559	1-106-395-00	MYLAR	0.15MF	10%	200V
C560	1-136-113-00	FILM	2MF	5%	200V
C561	1-124-634-11	ELECT	1MF	20%	250V
C562	1-102-228-00	CERAMIC	470PF	10%	500V
C563 ⚠	1-136-732-11	FILM	0.021MF	3%	1.4KV
C564	1-136-124-00	FILM	0.56MF	5%	400V
C565 ⚠	1-136-316-51	FILM	0.056MF	5%	630V
C566	1-124-045-00	ELECT	4.7MF	20%	50V
C567	1-162-318-11	CERAMIC	0.001MF	10%	500V
C568	1-106-383-00	MYLAR	0.047MF	10%	100V
C569	1-106-383-00	MYLAR	0.047MF	10%	200V
C570	1-162-114-00	CERAMIC	0.0047MF		2KV
C571	1-106-383-00	MYLAR	0.047MF	10%	200V
C572	1-123-875-11	ELECT	10MF	20%	50V
C574	1-106-220-00	MYLAR	0.1MF	10%	100V
C575	1-162-116-00	CERAMIC	680PF	10%	2KV
C594	1-124-557-11	ELECT	1000MF	20%	25V
C595	1-102-212-00	CERAMIC	820PF	10%	500V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C596	1-136-558-11	FILM	0.0039MF	10%	630V
C597	1-124-484-11	ELECT	220MF	20%	35V
C598	1-124-963-11	ELECT	33MF	20%	16V
C599	1-124-120-11	ELECT	220MF	20%	25V
C601 ⚠	1-108-745-52	MYLAR	0.22MF	20%	125V
C602	1-125-457-11	ELECT(BLOCK)	560MF		200V
C603	1-161-830-00	CERAMIC	0.0047MF		500V
C604	1-161-830-00	CERAMIC	0.0047MF		500V
C605	1-123-948-00	ELECT	22MF	20%	250V
C606	1-126-176-11	ELECT	220MF	20%	10V
C607	1-161-830-00	CERAMIC	0.0047MF		500V
C615	1-124-046-00	ELECT	10MF	20%	160V
C616	1-124-046-00	ELECT	10MF	20%	160V
C617	1-124-046-00	ELECT	10MF	20%	160V

<FILTER BLOCK>

CM301	1-464-720-11	FILTER BLOCK, COM (CFB-1)	

<COMPOSITION CIRCUIT BLOCK>

CP008	1-233-147-11	COMPOSITION CIRCUIT BLOCK	
CP009	1-233-145-11	COMPOSITION CIRCUIT BLOCK	
CP102	1-233-117-11	COMPOSITION CIRCUIT BLOCK	
CP103	1-236-137-11	NETWORK, RES, THICK FILM	
CP104	1-233-147-11	COMPOSITION CIRCUIT BLOCK	
CP107	1-233-146-11	COMPOSITION CIRCUIT BLOCK	
CP108	1-233-118-11	COMPOSITION CIRCUIT BLOCK	
CP109	1-233-117-11	COMPOSITION CIRCUIT BLOCK	
CP112	1-236-077-11	NETWORK, RES, THICK FILM	
CP301	1-236-078-11	NETWORK, RES, THICK FILM	

<DIODE>

D101	8-719-110-78	DIODE RD33ES-B2	
D112	8-719-911-19	DIODE 1SS119	
D113	8-719-911-19	DIODE 1SS119	
D114	8-719-911-19	DIODE 1SS119	
D115	8-719-109-74	DIODE RD4.3ES-B1	
D116	8-719-911-19	DIODE 1SS119	
D117	8-719-109-89	DIODE RD5.6ES-B2	
D118	8-719-911-19	DIODE 1SS119	
D119	8-719-911-19	DIODE 1SS119	
D120	8-719-911-19	DIODE 1SS119	
D121	8-719-911-19	DIODE 1SS119	
D122	8-719-911-19	DIODE 1SS119	
D123	8-719-911-19	DIODE 1SS119	
D125	8-719-911-19	DIODE 1SS119	
D128	8-719-911-19	DIODE 1SS119	
D350	8-719-911-19	DIODE 1SS119	
D351	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D506	8-719-911-19	DIODE 1SS119	
D508	8-719-200-02	DIODE 10E2	
D509	8-719-911-19	DIODE 1SS119	
D510	8-719-911-19	DIODE 1SS119	
D511	8-719-971-20	DIODE ERC38-06	
D512	8-719-945-80	DIODE ERC06-15S	
D513	8-719-945-80	DIODE ERC06-15S	
D514	8-719-900-26	DIODE ERD29-08J	
D515	8-719-200-02	DIODE 10E2	
D516	8-719-200-02	DIODE 10E2	
D517	8-719-300-33	DIODE RU-3AM	
D518	8-719-300-65	DIODE ES1F	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D519	8-719-300-65	DIODE ESIF	
D597	8-719-901-58	DIODE RGP15J	
D598	8-719-300-70	DIODE RH-1C	
D599	8-719-110-17	DIODE RD10ES-B2	
D601 ⚠	8-719-305-07	DIODE RBV-406H	
D602	8-719-200-02	DIODE 10E2	
D603	8-719-304-63	DIODE RM11C	
D604	8-719-304-63	DIODE RM11C	
D605	8-719-109-84	DIODE RD5.1ES-B1	
D606	8-719-200-02	DIODE 10E2	
		<FUSE>	
F601 ⚠	1-532-509-11	FUSE, GLASS TUBE 6.3A/125V	
	1-533-190-11	CLIP, FUSE; F601	
F602 ⚠	1-532-742-11	FUSE, GLASS TUBE 1.6A/125V	
*	1-533-189-11	HOLDER, FUSE	
		<IC>	
IC101	8-759-605-39	IC M50439-519SP	
IC102	8-759-803-24	IC CXK1004L	
IC201	8-749-900-15	IC SI-4102	
IC202	8-749-900-15	IC SI-4102	
IC203	8-752-006-12	IC CX20061	
IC301	8-752-031-72	IC CXA1013AS	
IC303	8-759-982-37	IC RC78M93FD	
IC501	8-759-402-35	IC AN5521	
IC502	8-759-945-58	IC RC4558P	
IC601 ⚠	8-749-930-35	IC STR3035	
	4-369-267-01	SPACER, MICA; IC601	
MM201	8-741-156-80	IC SBX1568-51	
		<IF BLOCK>	
IF201	1-464-755-11	IF BLOCK (IFE-450)	
		<COIL>	
L101	1-410-482-31	INDUCTOR 100UH	
L103	1-410-482-31	INDUCTOR 100UH	
L105	1-408-404-00	INDUCTOR 3.9UH	
L106	1-408-404-00	INDUCTOR 3.9UH	
L107	1-410-482-31	INDUCTOR 100UH	
L108	1-408-411-00	INDUCTOR 15UH	
L109	1-408-411-00	INDUCTOR 15UH	
L203	1-408-408-00	INDUCTOR 8.2UH	
L301	1-408-411-00	INDUCTOR 15UH	
L501	1-408-226-00	INDUCTOR 82UH	
L502	1-408-938-00	INDUCTOR 22UH	
L504	1-459-313-00	COIL WITH CORE (HWC)	
L505	1-459-104-00	COIL, DUST CORE	
L506	1-407-365-00	COIL,CHOKE	
L507	1-408-349-00	COIL, CHOKE	
L508	1-408-239-00	INDUCTOR 4.7MMH	
L510 ⚠	1-459-224-13	HLC	
L511	1-459-075-00	COIL,DYNAMIC CONVERSION CHOKE	
L516	1-408-225-00	INDUCTOR 3.3UH	
L601 ⚠	1-408-225-21	INDUCTOR 3.3UH	
L602 ⚠	1-408-225-21	INDUCTOR 3.3UH	
L609	1-410-459-11	INDUCTOR 1.2UH	
		<NEON LAMP>	
NL501	1-519-108-99	LAMP, NEON	
		<MODULE>	
PM501	1-235-963-11	PROTECTOR MODULE (PM-9)	
		<TRANSISTOR>	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q106	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q108	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q109	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q110	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q112	8-729-378-92	TRANSISTOR 2SD789-4	
Q113	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q114	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q115	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q116	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q119	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q120	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q121	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q122	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203 ⚠	8-729-378-88	TRANSISTOR 2SD788-4	
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q302	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q303	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q305	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q311	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q354	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q356	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q357	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q371	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q501	8-729-107-26	TRANSISTOR 2SD1585-K	
Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q506	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q550	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q551	8-729-304-50	TRANSISTOR 2SD1941-06	
*	4-378-214-01	HOLDER, TR; Q551	
Q599	8-729-378-92	TRANSISTOR 2SD789-4	
Q601	8-729-255-12	TRANSISTOR 2SC2551	
		<RESISTOR>	
R001	1-249-421-11	CARBON 2.2K 5% 1/4W	
R002	1-249-414-11	CARBON 560 5% 1/4W	
R004	1-249-414-11	CARBON 560 5% 1/4W	
R005	1-249-414-11	CARBON 560 5% 1/4W	
R006	1-249-414-11	CARBON 560 5% 1/4W	
R007	1-249-414-11	CARBON 560 5% 1/4W	
R008	1-249-414-11	CARBON 560 5% 1/4W	
R009	1-249-414-11	CARBON 560 5% 1/4W	
R014	1-249-421-11	CARBON 2.2K 5% 1/4W	
R015	1-249-421-11	CARBON 2.2K 5% 1/4W	
R016	1-249-421-11	CARBON 2.2K 5% 1/4W	
R017	1-249-421-11	CARBON 2.2K 5% 1/4W	
R018	1-249-416-11	CARBON 820 5% 1/4W	
R019	1-249-429-11	CARBON 10K 5% 1/4W	
R020	1-249-429-11	CARBON 10K 5% 1/4W	

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R021	1-249-434-11	CARBON	27K	5%	1/4W	
R022	1-249-414-11	CARBON	560	5%	1/4W	
R024	1-249-421-11	CARBON	2.2K	5%	1/4W	
R025	1-249-421-11	CARBON	2.2K	5%	1/4W	
R026	1-249-421-11	CARBON	2.2K	5%	1/4W	
R027	1-249-421-11	CARBON	2.2K	5%	1/4W	
R028	1-249-423-11	CARBON	3.3K	5%	1/4W	
R029	1-249-414-11	CARBON	560	5%	1/4W	
R030	1-249-414-11	CARBON	560	5%	1/4W	
R032	1-249-414-11	CARBON	560	5%	1/4W	
R034	1-249-426-11	CARBON	5.6K	5%	1/4W	
R035	1-249-417-11	CARBON	1K	5%	1/4W	
R036	1-249-416-11	CARBON	820	5%	1/4W	
R037	1-249-416-11	CARBON	820	5%	1/4W	
R038	1-249-414-11	CARBON	560	5%	1/4W	
R040	1-249-431-11	CARBON	15K	5%	1/4W	
R044	1-249-414-11	CARBON	560	5%	1/4W	
R101	1-249-426-11	CARBON	5.6K	5%	1/4W	
R102	1-249-417-11	CARBON	1K	5%	1/4W	
R103	1-215-923-00	METAL OXIDE	10K	5%	3W	F
R104	1-247-721-11	CARBON	4.7K	5%	1/4W	
R105	1-249-437-11	CARBON	47K	5%	1/4W	
R106	1-249-433-11	CARBON	22K	5%	1/4W	
R108	1-249-425-11	CARBON	4.7K	5%	1/4W	
R109	1-249-409-11	CARBON	220	5%	1/4W	
R113	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-249-421-11	CARBON	2.2K	5%	1/4W	
R116	1-249-421-11	CARBON	2.2K	5%	1/4W	
R117	1-249-421-11	CARBON	2.2K	5%	1/4W	
R118	1-249-433-11	CARBON	22K	5%	1/4W	
R119	1-247-713-11	CARBON	1K	5%	1/4W	
R120	1-249-437-11	CARBON	47K	5%	1/4W	
R121	1-249-434-11	CARBON	27K	5%	1/4W	
R124	1-249-417-11	CARBON	1K	5%	1/4W	
R125	1-249-417-11	CARBON	1K	5%	1/4W	
R126	1-249-429-11	CARBON	10K	5%	1/4W	
R128	1-249-429-11	CARBON	10K	5%	1/4W	
R131	1-249-412-11	CARBON	390	5%	1/4W	
R132	1-249-412-11	CARBON	390	5%	1/4W	
R133	1-249-429-11	CARBON	10K	5%	1/4W	
R134	1-247-708-11	CARBON	470	5%	1/4W	
R136	1-247-700-11	CARBON	100	5%	1/4W	
R137	1-249-441-11	CARBON	100K	5%	1/4W	
R139	1-249-417-11	CARBON	1K	5%	1/4W	
R140	1-249-417-11	CARBON	1K	5%	1/4W	
R141	1-249-417-11	CARBON	1K	5%	1/4W	
R142	1-249-429-11	CARBON	10K	5%	1/4W	
R143	1-249-429-11	CARBON	10K	5%	1/4W	
R145	1-249-414-11	CARBON	560	5%	1/4W	
R146	1-247-713-11	CARBON	1K	5%	1/4W	
R147	1-249-416-11	CARBON	820	5%	1/4W	
R148	1-249-432-11	CARBON	18K	5%	1/4W	
R149	1-249-423-11	CARBON	3.3K	5%	1/4W	
R150	1-249-437-11	CARBON	47K	5%	1/4W	
R151	1-249-429-11	CARBON	10K	5%	1/4W	
R152	1-249-433-11	CARBON	22K	5%	1/4W	
R153	1-249-427-11	CARBON	6.8K	5%	1/4W	
R154	1-247-889-00	CARBON	270K	5%	1/4W	
R155	1-249-439-11	CARBON	68K	5%	1/4W	
R156	1-249-424-11	CARBON	3.9K	5%	1/4W	
R157	1-249-409-11	CARBON	220	5%	1/4W	
R158	1-247-889-00	CARBON	270K	5%	1/4W	
R159	1-249-409-11	CARBON	220	5%	1/4W	
R160	1-249-439-11	CARBON	68K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R161	1-249-424-11	CARBON	3.9K	5%	1/4W	
R162	1-249-433-11	CARBON	22K	5%	1/4W	
R163	1-249-433-11	CARBON	22K	5%	1/4W	
R164	1-249-433-11	CARBON	22K	5%	1/4W	
R165	1-249-433-11	CARBON	22K	5%	1/4W	
R166	1-249-429-11	CARBON	10K	5%	1/4W	
R167	1-247-903-00	CARBON	1M	5%	1/4W	
R170	1-249-415-11	CARBON	680	5%	1/4W	
R171	1-249-423-11	CARBON	3.3K	5%	1/4W	
R172	1-249-434-11	CARBON	27K	5%	1/4W	
R174	1-247-889-00	CARBON	270K	5%	1/4W	
R175	1-249-441-11	CARBON	100K	5%	1/4W	
R176	1-249-441-11	CARBON	100K	5%	1/4W	
R180	1-249-426-11	CARBON	5.6K	5%	1/4W	
R181	1-249-416-11	CARBON	820	5%	1/4W	
R182	1-249-415-11	CARBON	680	5%	1/4W	
R185	1-247-725-11	CARBON	10K	5%	1/4W	
R201	1-249-405-11	CARBON	100	5%	1/4W	
R202	1-247-700-11	CARBON	100	5%	1/4W	
R204	1-249-435-11	CARBON	33K	5%	1/4W	
R207	1-249-435-11	CARBON	33K	5%	1/4W	
R208	1-249-425-11	CARBON	4.7K	5%	1/4W	
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-247-700-11	CARBON	100	5%	1/4W	
R211	1-249-433-11	CARBON	22K	5%	1/4W	
R212	1-249-419-11	CARBON	1.5K	5%	1/4W	
R213	1-249-411-11	CARBON	330	5%	1/4W	
R214	1-249-411-11	CARBON	330	5%	1/4W	
R217	1-247-713-11	CARBON	1K	5%	1/4W	
R221	1-249-414-11	CARBON	560	5%	1/4W	
R229	1-249-411-11	CARBON	330	5%	1/4W	
R230	1-249-411-11	CARBON	330	5%	1/4W	
R231	1-247-700-11	CARBON	100	5%	1/4W	
R232	1-247-706-11	CARBON	330	5%	1/4W	
R233	1-249-411-11	CARBON	330	5%	1/4W	
R234	1-249-411-11	CARBON	330	5%	1/4W	
R240	1-249-425-11	CARBON	4.7K	5%	1/4W	
R241	1-249-441-11	CARBON	100K	5%	1/4W	
R250	1-249-411-11	CARBON	330	5%	1/4W	F
R251	⚠1-249-401-91	CARBON	47	5%	1/4W	F
R252	1-249-430-11	CARBON	12K	5%	1/4W	
R253	1-249-434-11	CARBON	27K	5%	1/4W	
R254	1-249-403-11	CARBON	68	5%	1/4W	
R290	1-249-410-11	CARBON	270	5%	1/4W	F
R291	1-249-430-11	CARBON	12K	5%	1/4W	
R292	⚠1-249-401-91	CARBON	47	5%	1/4W	F
R293	1-249-434-11	CARBON	27K	5%	1/4W	
R301	1-215-472-00	METAL	130K	1%	1/6W	
R302	1-249-437-11	CARBON	47K	5%	1/4W	
R304	1-247-889-00	CARBON	270K	5%	1/4W	
R305	1-249-440-11	CARBON	82K	5%	1/4W	
R306	1-249-437-11	CARBON	47K	5%	1/4W	
R307	1-249-429-11	CARBON	10K	5%	1/4W	
R308	1-249-411-11	CARBON	330	5%	1/4W	
R309	1-249-411-11	CARBON	330	5%	1/4W	
R310	1-249-411-11	CARBON	330	5%	1/4W	
R315	1-249-417-11	CARBON	1K	5%	1/4W	
R316	1-247-706-11	CARBON	330	5%	1/4W	
R318	1-249-417-11	CARBON	1K	5%	1/4W	
R319	1-249-417-11	CARBON	1K	5%	1/4W	
R320	1-249-417-11	CARBON	1K	5%	1/4W	
R323	1-249-427-11	CARBON	6.8K	5%	1/4W	
R325	1-249-435-11	CARBON	33K	5%	1/4W	

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ※ : Selected to yield optimum performance.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R328	1-249-414-11	CARBON	560	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-249-426-11	CARBON	5.6K	5%	1/4W	
R333	1-249-429-11	CARBON	10K	5%	1/4W	
R334	1-249-413-11	CARBON	470	5%	1/4W	
R335	1-247-721-11	CARBON	4.7K	5%	1/4W	
R340	1-249-427-11	CARBON	6.8K	5%	1/4W	
R341	1-247-717-11	CARBON	2.2K	5%	1/4W	
R342	1-247-717-11	CARBON	2.2K	5%	1/4W	
R344	1-215-894-11	METAL OXIDE	2.2K	5%	2W	F
R348	1-247-717-11	CARBON	2.2K	5%	1/4W	
R349	1-249-417-11	CARBON	1K	5%	1/4W	
R350	1-249-437-11	CARBON	47K	5%	1/4W	
R351	1-247-903-00	CARBON	1M	5%	1/4W	
R352	1-247-901-11	CARBON	820K	5%	1/4W	
R353	1-249-429-11	CARBON	10K	5%	1/4W	
R361	1-249-429-11	CARBON	10K	5%	1/4W	
R362	⚠1-216-470-51	METAL OXIDE	18	5%	3W	F
R364	1-249-437-11	CARBON	47K	5%	1/4W	
R366	1-247-713-11	CARBON	1K	5%	1/4W	
R368	1-249-417-11	CARBON	1K	5%	1/4W	
R369	1-249-417-11	CARBON	1K	5%	1/4W	
R371	1-249-429-11	CARBON	10K	5%	1/4W	
R375	1-249-434-11	CARBON	27K	5%	1/4W	
R378	1-215-894-11	METAL OXIDE	2.2K	5%	2W	F
R379	1-215-894-11	METAL OXIDE	2.2K	5%	2W	F
R380	1-249-419-11	CARBON	1.5K	5%	1/4W	F
⊠R381	⚠	METAL			1/6W	
R382	1-202-830-00	SOLID	10K	10%	1/2W	
R385	1-249-436-11	CARBON	39K	5%	1/4W	
R386	1-249-439-11	CARBON	68K	5%	1/4W	
R387	1-249-462-11	CARBON	22K	5%	1/4W	
R389	1-249-414-11	CARBON	560	5%	1/4W	
R390	1-247-721-11	CARBON	4.7K	5%	1/4W	
R391	1-249-441-11	CARBON	100K	5%	1/4W	
R392	1-249-429-11	CARBON	10K	5%	1/4W	
R501	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R502	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R503	1-249-405-11	CARBON	100	5%	1/4W	
R504	1-249-414-11	CARBON	560	5%	1/4W	
R505	1-215-472-00	METAL	130K	1%	1/6W	
R506	1-247-702-11	CARBON	150	5%	1/4W	
R507	1-249-426-11	CARBON	5.6K	5%	1/4W	
R508	1-249-437-11	CARBON	47K	5%	1/4W	
R509	1-249-434-11	CARBON	27K	5%	1/4W	
R510	1-249-422-11	CARBON	2.7K	5%	1/4W	
R512	1-249-411-11	CARBON	330	5%	1/4W	
R513	1-215-472-00	METAL	130K	1%	1/6W	
R514	1-215-459-00	METAL	39K	1%	1/6W	
R515	1-215-441-00	METAL	6.8K	1%	1/6W	
R516	1-249-428-11	CARBON	8.2K	5%	1/4W	
R517	1-247-713-11	CARBON	1K	5%	1/4W	
R519	1-249-424-11	CARBON	3.9K	5%	1/4W	
R521	1-247-887-00	CARBON	220K	5%	1/4W	
R522	1-249-421-11	CARBON	2.2K	5%	1/4W	
R523	1-249-417-11	CARBON	1K	5%	1/4W	
R524	1-247-713-11	CARBON	1K	5%	1/4W	
R525	1-249-419-11	CARBON	1.5K	5%	1/4W	
R526	1-249-431-11	CARBON	15K	5%	1/4W	
R527	1-249-417-11	CARBON	1K	5%	1/4W	
R528	1-249-429-11	CARBON	10K	5%	1/4W	
R529	1-249-423-11	CARBON	3.3K	5%	1/4W	
R530	1-249-433-11	CARBON	22K	5%	1/4W	
R531	1-246-535-00	CARBON	390K	5%	1/4W	
R532	1-249-438-11	CARBON	56K	5%	1/4W	
R533	1-249-417-11	CARBON	1K	5%	1/4W	
R534	1-249-410-11	CARBON	270	5%	1/4W	
R535	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R536	1-247-722-11	CARBON	5.6K	5%	1/4W	
R537	1-247-726-11	CARBON	33K	5%	1/4W	
R539	1-215-373-31	METAL	10	1%	1/6W	
R540	1-249-405-11	CARBON	100	5%	1/4W	
R541	1-249-429-11	CARBON	10K	5%	1/4W	
R542	1-249-426-11	CARBON	5.6K	5%	1/4W	
R543	1-249-434-11	CARBON	27K	5%	1/4W	
R544	1-249-429-11	CARBON	10K	5%	1/4W	
R545	1-247-754-11	CARBON	1.5K	5%	1/2W	
R546	1-249-415-11	CARBON	680	5%	1/4W	F
R547	1-249-429-11	CARBON	10K	5%	1/4W	
R548	1-249-437-11	CARBON	47K	5%	1/4W	
R549	⚠1-249-415-91	CARBON	680	5%	1/4W	F
R550	1-249-440-11	CARBON	82K	5%	1/4W	
※R551	1-249-437-11	CARBON	47K	5%	1/4W	
R552	1-247-713-11	CARBON	1K	5%	1/4W	F
R553	1-249-413-11	CARBON	470	5%	1/4W	
R554	1-249-429-11	CARBON	10K	5%	1/4W	
※R555	1-249-413-11	CARBON	470	5%	1/4W	
R556	1-216-371-00	METAL OXIDE	1.5	5%	2W	F
R557	1-259-871-15	CARBON	6.8M	5%	1/4W	
R558	1-249-407-11	CARBON	150	5%	1/4W	
R559	1-249-417-11	CARBON	1K	5%	1/4W	
R560	1-247-719-11	CARBON	3.3K	5%	1/4W	
R561	1-247-717-11	CARBON	2.2K	5%	1/4W	
R562	1-215-880-00	METAL OXIDE	10	5%	2W	F
R563	1-249-436-11	CARBON	39K	5%	1/4W	
R564	1-249-433-11	CARBON	22K	5%	1/4W	
R565	1-249-441-11	CARBON	100K	5%	1/4W	
R566	1-247-895-00	CARBON	470K	5%	1/4W	
R567	⚠1-216-373-51	METAL OXIDE	2.2	5%	2W	F
R568	⚠1-249-448-51	CARBON	1.2	5%	1/4W	F
R569	1-249-423-11	CARBON	3.3K	5%	1/4W	
R570	⚠1-215-918-51	METAL OXIDE	1.5K	5%	3W	F
R571	1-247-700-11	CARBON	100	5%	1/4W	
R572	1-249-423-11	CARBON	3.3K	5%	1/4W	
R573	1-247-722-11	CARBON	5.6K	5%	1/4W	F
R574	1-216-345-11	METAL OXIDE	0.47	5%	1W	F
R575	1-249-434-11	CARBON	27K	5%	1/4W	
R576	1-249-389-11	CARBON	4.7	5%	1/4W	F
R577	1-215-860-11	METAL OXIDE	33	5%	1W	F
R578	⚠1-215-880-91	METAL OXIDE	10	5%	2W	F
R579	⚠1-249-415-91	CARBON	680	5%	1/4W	F
R580	⚠1-215-861-91	METAL OXIDE	47	5%	1W	F
R581	1-247-708-11	CARBON	470	5%	1/4W	F
R582	1-216-450-00	METAL OXIDE	82	5%	2W	F
R583	1-216-450-00	METAL OXIDE	82	5%	2W	F
R584	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R585	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R586	1-216-429-00	METAL OXIDE	270	5%	1W	F
R587	⚠1-216-434-91	METAL OXIDE	1.8K	5%	1W	F
R588	1-247-696-11	CARBON	47	5%	1/4W	
R589	1-249-441-11	CARBON	100K	5%	1/4W	
R591	⚠1-216-345-91	METAL OXIDE	0.47	5%	1W	F
R592	⚠1-249-448-51	CARBON	1.2	5%	1/4W	F
R593	1-216-374-00	METAL OXIDE	2.7	5%	2W	F
R598	⚠1-249-389-91	CARBON	4.7	5%	1/4W	F
R599	1-249-419-11	CARBON	1.5K	5%	1/4W	
R601	1-202-726-00	SOLID	3.9M	10%	1/2W	

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A **M1** **M2**

REF.NO.	PART NO.	DESCRIPTION				REMARK
R602 ⚠	1-205-741-11	WIREWOUND	1.8	5%	10W	F
R605 ⚠	1-205-702-11	WIREWOUND	220	5%	20W	F
R606	1-247-889-00	CARBON	270K	5%	1/4W	
R610 ⚠	1-217-224-11	WIREWOUND	100	10%	2W	F
R611	1-215-872-11	METAL OXIDE	3.3K	5%	1W	F
R613	1-249-437-11	CARBON	47K	5%	1/4W	
R614	1-249-425-11	CARBON	4.7K	5%	1/4W	
R615 ⚠	1-216-463-91	METAL OXIDE	12K	5%	2W	F
R616 ⚠	1-247-719-51	CARBON	3.3K	5%	1/4W	F
R617 ⚠	1-249-401-91	CARBON	47	5%	1/4W	F
R618	1-247-895-00	CARBON	470K	5%	1/4W	
R619	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R620	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R621	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R650 ⚠	1-205-702-11	WIREWOUND	220	5%	20W	F

<VARIABLE RESISTOR>

RV201	1-238-015-11	RES, ADJ, CARBON 4.7K
RV291	1-238-010-11	RES, ADJ, CARBON 330
RV307	1-238-011-11	RES, ADJ, CARBON 470
RV501	1-228-728-00	RES, ADJ, CERAMIC CARBON 100K
RV502	1-238-020-11	RES, ADJ, CARBON 100K
RV504	1-238-017-11	RES, ADJ, CARBON 22K
RV505	1-238-017-11	RES, ADJ, CARBON 22K
RV506	1-238-019-11	RES, ADJ, CARBON 47K
RV507	1-238-010-11	RES, ADJ, CARBON 330
RV508	1-238-012-11	RES, ADJ, CARBON 1K

<RELAY>

RY601 ⚠	1-515-573-12	RELAY, POWER

<SWITCH>

S501	1-554-186-00	SWITCH, LEVER

<SPARK GAP>

SG501	1-519-422-11	GAP, SPARK

<TRANSFORMER>

T101	1-404-538-11	COIL
T201 ⚠	1-427-462-11	TRANSFORMER, SOUND OUTPUT
T299 ⚠	1-427-462-11	TRANSFORMER, SOUND OUTPUT
T501	1-437-079-00	TRANSFORMER, HORIZONTAL DRIVE
T502 ⚠	1-421-794-11	TRANSFORMER, FERRITE (PMT)
T599 ⚠	1-421-857-11	TRANSFORMER, FERRITE
T601 ⚠	1-421-357-31	TRANSFORMER, LINE FILTER

<THERMISTOR>

THP601 ⚠	1-808-081-13	THERMISTOR, POSITIVE

<CRYSTAL>

X101	1-567-192-11	OSCILLATOR, CERAMIC
X301	1-567-505-11	OSCILLATOR, CRYSTAL

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-624-988-11	M1 BOARD	
		********	
	*1-566-049-11	PIN, CONNECTOR 10P	
	*1-566-057-11	PIN, CONNECTOR 5P	
	*4-374-987-01	GUIDE, LIGHT	
	*4-381-686-01	BRACKET (B), LIGHT GUIDE	

<DIODE>

D801	8-719-311-89	DIODE SEL1222R-C
	*4-368-519-00	HOLDER (3 GANG), LED; D801
D802	8-719-311-89	DIODE SEL1222R-C
	*4-368-519-00	HOLDER (3 GANG), LED; D802
D803	8-719-311-89	DIODE SEL1222R-C
	*4-368-519-00	HOLDER (3 GANG), LED; D803
D804	8-719-311-89	DIODE SEL1222R-C

<IC>

IC801	8-741-148-33	IC SBX1483-59

<SWITCH>

S801	1-554-937-11	SWITCH, KEY BOARD
S802	1-554-937-11	SWITCH, KEY BOARD
S803	1-554-937-11	SWITCH, KEY BOARD
S804	1-554-937-11	SWITCH, KEY BOARD
S805	1-554-937-11	SWITCH, KEY BOARD
S806	1-554-937-11	SWITCH, KEY BOARD
S808 ⚠	1-554-937-11	SWITCH, KEY BOARD (POWER)

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	*1-624-989-11	M2 BOARD
		********
	*1-566-058-11	PIN, CONNECTOR 6P
	*1-566-061-11	PIN, CONNECTOR 9P

<DIODE>

D804	8-719-911-19	DIODE 1SS119

<RESISTOR>

R801	1-249-429-11	CARBON	10K	5%	1/4W
R802	1-249-430-11	CARBON	12K	5%	1/4W
R803	1-249-428-11	CARBON	8.2K	5%	1/4W

<VARIABLE RESISTOR>

RV801	1-237-999-11	RES, VAR, CARBON 20KX4
RV802	1-237-999-11	RES, VAR, CARBON 20KX4
RV803	1-237-999-11	RES, VAR, CARBON 20KX4
RV804	1-237-999-11	RES, VAR, CARBON 20KX4

<SWITCH>

S809	1-554-303-21	SWITCH, KEY BOARD
S810	1-554-303-21	SWITCH, KEY BOARD
S811	1-554-303-21	SWITCH, KEY BOARD
S812	1-571-399-11	SWITCH, ROTARY
S813	1-571-399-11	SWITCH, ROTARY
S814	1-571-399-11	SWITCH, ROTARY

****

C U

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1330-838-A	C BOARD, COMPLETE				
		**********				
	1-526-798-51	SOCKET, PICTURE TUBE				
	*4-379-160-01	COVER (REAR LID), CV				
	*4-379-167-01	COVER (MAIN), CV				
		<CONNECTOR>				
C1	*1-506-371-00	PIN, CONNECTOR 2P				
C2	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P				
C3	*1-566-058-11	PIN, CONNECTOR 6P				
		<CAPACITOR>				
C701	1-136-601-11	FILM	0.01MF	10%	630V	
C702	1-162-115-00	CERAMIC	330PF	10%	2KV	
C704	1-124-915-11	ELECT	10MF	20%	63V	
C705	1-102-116-00	CERAMIC	680PF	10%	50V	
C706	1-102-116-00	CERAMIC	680PF	10%	50V	
C707	1-102-116-00	CERAMIC	680PF	10%	50V	
C708	1-102-110-00	CERAMIC	220PF	10%	50V	
C709	1-102-110-00	CERAMIC	220PF	10%	50V	
C710	1-102-110-00	CERAMIC	220PF	10%	50V	
C711	1-101-004-00	CERAMIC	0.01MF		50V	
C722	1-162-622-11	CERAMIC	330PF	10%	6.3KV	
		<DIODE>				
D701	8-719-911-19	DIODE 1SS119				
D702	8-719-911-19	DIODE 1SS119				
D703	8-719-911-19	DIODE 1SS119				
		<COIL>				
L701	1-408-417-00	INDUCTOR	47UH			
		<TRANSISTOR>				
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q702	8-729-326-11	TRANSISTOR 2SC2611				
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q704	8-729-326-11	TRANSISTOR 2SC2611				
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q706	8-729-326-11	TRANSISTOR 2SC2611				
		<RESISTOR>				
R701	1-202-838-00	SOLID	100K	10%	1/2W	
R702	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R703	1-202-842-11	SOLID	220K	10%	1/2W	
R704	1-202-846-00	SOLID	470K	10%	1/2W	
R705	1-202-837-00	SOLID	82K	10%	1/2W	
R706	1-202-549-00	SOLID	100	10%	1/2W	
R707	1-202-842-11	SOLID	220K	10%	1/2W	
R708	1-202-824-00	SOLID	3.3K	10%	1/2W	
R709	1-202-824-00	SOLID	3.3K	10%	1/2W	
R710	1-247-700-11	SOLID	100	5%	1/4W	
R710	1-247-700-11	SOLID	100	10%	1/4W	
R711	1-249-409-11	CARBON	220	5%	1/4W	
R712	1-249-409-11	CARBON	220	5%	1/4W	
R713	1-202-824-00	SOLID	3.3K	10%	1/2W	
R714	1-249-421-11	CARBON	2.2K	5%	1/4W	
R715	1-249-422-11	CARBON	2.7K	5%	1/4W	
R716	1-249-414-11	CARBON	560	5%	1/4W	
R718	1-249-405-11	CARBON	100	5%	1/4W	
R719	1-249-418-11	CARBON	1.2K	5%	1/4W	
R720	1-249-413-11	CARBON	470	5%	1/4W	
R722 ⚠	1-206-692-61	METAL OXIDE	15K	5%	2W	F
R723	1-249-414-11	CARBON	560	5%	1/4W	
R725	1-249-422-11	CARBON	2.7K	5%	1/4W	
R726	1-249-405-11	CARBON	100	5%	1/4W	
R727	1-249-418-11	CARBON	1.2K	5%	1/4W	
R728	1-249-413-11	CARBON	470	5%	1/4W	
R729	1-249-409-11	CARBON	220	5%	1/4W	
R730 ⚠	1-206-692-61	METAL OXIDE	15K	5%	2W	F
R732	1-249-411-11	CARBON	330	5%	1/4W	
R733	1-249-422-11	CARBON	2.7K	5%	1/4W	
R734	1-249-425-11	CARBON	4.7K	5%	1/4W	
R735	1-249-405-11	CARBON	100	5%	1/4W	
R737 ⚠	1-206-692-61	METAL OXIDE	15K	5%	2W	F
R738	1-202-848-00	SOLID	680K	10%	1/2W	
R739	1-202-838-00	SOLID	100K	10%	1/2W	
R740	1-202-842-11	SOLID	220K	10%	1/2W	
		<VARIABLE RESISTOR>				
RV701 ⚠	1-230-619-11	RES, ADJ, METAL GLAZE 110M				
RV702	1-228-992-11	RES, ADJ, CARBON 3.3K				
RV703	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV704	1-228-992-11	RES, ADJ, CARBON 3.3K				
RV705	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV706	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV707	1-228-995-00	RES, ADJ, CARBON 22K				
RV708	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				
		**********				
	*A-1394-132-A	U BOARD, COMPLETE				
		**********				
		<CAPACITOR>				
C1402	1-124-604-00	ELECT	330MF	20%	10V	
C1405	1-124-119-00	ELECT	330MF	20%	16V	
C1406	1-101-004-00	CERAMIC	0.01MF		50V	
C1407	1-126-101-11	ELECT	100MF	20%	16V	
C1408	1-101-004-00	CERAMIC	0.01MF		50V	
C1409	1-126-101-11	ELECT	100MF	20%	16V	
C1423	1-106-375-12	MYLAR	0.022MF	10%	100V	
C1424	1-106-363-00	MYLAR	0.0068MF	10%	100V	
C1426	1-106-375-12	MYLAR	0.022MF	10%	100V	
C1427	1-106-363-00	MYLAR	0.0068MF	10%	100V	
C1430 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V	
C1431	1-124-499-11	ELECT	1MF	20%	50V	
C1432	1-124-499-11	ELECT	1MF	20%	50V	
C1436	1-123-875-11	ELECT	10MF	20%	50V	
C1437	1-123-875-11	ELECT	10MF	20%	50V	
C1438	1-123-875-11	ELECT	10MF	20%	50V	
C1439	1-123-875-11	ELECT	10MF	20%	50V	
C1442	1-126-233-11	ELECT	22MF	20%	50V	
C1446	1-123-875-11	ELECT	10MF	20%	50V	
C1447	1-123-875-11	ELECT	10MF	20%	50V	
C1449	1-126-101-11	ELECT	100MF	20%	16V	
C1450	1-124-499-11	ELECT	1MF	20%	50V	
C1451	1-124-499-11	ELECT	1MF	20%	50V	
C1452	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C1453	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C1454	1-126-103-11	ELECT	470MF	20%	16V	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
C1467	1-124-768-11	ELECT	4.7MF	20%	50V	
C1468	1-124-768-11	ELECT	4.7MF	20%	50V	
C1469	1-123-875-11	ELECT	10MF	20%	50V	
C1470	1-124-499-11	ELECT	1MF	20%	50V	
C1471	1-124-499-11	ELECT	1MF	20%	50V	
C1472	1-123-875-11	ELECT	10MF	20%	50V	
C1473	1-123-875-11	ELECT	10MF	20%	50V	
C1474	1-123-875-11	ELECT	10MF	20%	50V	
C1475	1-123-875-11	ELECT	10MF	20%	50V	
C1476	1-124-499-11	ELECT	1MF	20%	50V	
C1477	1-124-499-11	ELECT	1MF	20%	50V	
C1480	1-123-875-11	ELECT	10MF	20%	50V	
C1481	1-123-875-11	ELECT	10MF	20%	50V	
		<DIODE>				
D1401	8-719-109-92	DIODE RD6.2ES-B1				
D1430	8-719-911-19	DIODE 1SS119				
		<IC>				
IC1401	⚠1-235-783-11	INSULATED MODULE, VIDEO(IVM-1)				
IC1402	⚠1-235-784-12	INSULATED MODULE, AUDIO(IAM-1)				
IC1403	⚠1-235-784-12	INSULATED MODULE, AUDIO(IAM-1)				
IC1404	⚠1-235-784-12	INSULATED MODULE, AUDIO(IAM-1)				
IC1405	⚠1-235-784-12	INSULATED MODULE, AUDIO(IAM-1)				
IC1407	8-759-000-49	IC MC14066BCP				
IC1410	8-759-983-38	IC MB3110APS-G-SNY				
		<JACK>				
J1401	1-563-303-21	JACK BLOCK, PIN 3P				
J1403	1-563-302-11	JACK BLOCK, PIN 2P				
		<TRANSISTOR>				
Q1439	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q1440	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q1441	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q1442	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q1443	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q1444	8-729-900-89	TRANSISTOR DTC144ES				
Q1445	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R1403	1-247-699-11	CARBON	82	5%	1/4W	
R1409	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1411	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1419	1-247-700-11	CARBON	100	5%	1/4W	
R1430	⚠1-202-726-91	SOLID	3.9M	10%	1/2W	
R1436	1-249-466-11	CARBON	56K	5%	1/4W	
R1438	1-249-466-11	CARBON	56K	5%	1/4W	
R1447	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1448	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1449	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1450	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1455	1-249-405-11	CARBON	100	5%	1/4W	
R1456	1-247-700-11	CARBON	100	5%	1/4W	
R1457	1-247-700-11	CARBON	100	5%	1/4W	
R1458	1-249-405-11	CARBON	100	5%	1/4W	
R1459	1-249-466-11	CARBON	56K	5%	1/4W	
R1460	1-249-466-11	CARBON	56K	5%	1/4W	
R1461	1-249-466-11	CARBON	56K	5%	1/4W	
R1462	1-249-438-11	CARBON	56K	5%	1/4W	
R1463	1-249-431-11	CARBON	15K	5%	1/4W	
R1464	1-249-431-11	CARBON	15K	5%	1/4W	
R1471	1-247-881-00	CARBON	120K	5%	1/4W	
R1472	1-247-881-00	CARBON	120K	5%	1/4W	
R1473	1-249-441-11	CARBON	100K	5%	1/4W	
R1474	1-249-441-11	CARBON	100K	5%	1/4W	
R1475	1-249-417-11	CARBON	1K	5%	1/4W	
R1477	1-249-405-11	CARBON	100	5%	1/4W	F
R1479	1-249-434-11	CARBON	27K	5%	1/4W	
R1480	1-249-463-11	CARBON	27K	5%	1/4W	
R1486	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1487	1-249-433-11	CARBON	22K	5%	1/4W	
R1489	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1490	1-249-433-11	CARBON	22K	5%	1/4W	
R1496	1-247-700-11	CARBON	100	5%	1/4W	
R1497	1-249-441-11	CARBON	100K	5%	1/4W	
R1500	1-249-417-11	CARBON	1K	5%	1/4W	
R1501	1-249-417-11	CARBON	1K	5%	1/4W	
R1503	1-249-463-11	CARBON	27K	5%	1/4W	
R1504	1-249-463-11	CARBON	27K	5%	1/4W	
R1505	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1506	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1507	1-247-885-00	CARBON	180K	5%	1/4W	
R1508	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1509	⚠1-249-391-91	CARBON	6.8	5%	1/4W	F
R1510	1-247-713-11	CARBON	1K	5%	1/4W	
R1511	1-249-469-11	CARBON	100K	5%	1/4W	
R1512	1-247-713-11	CARBON	1K	5%	1/4W	
R1513	1-249-469-11	CARBON	100K	5%	1/4W	
R1514	1-249-435-11	CARBON	33K	5%	1/4W	
R1515	1-249-435-11	CARBON	33K	5%	1/4W	
R1516	1-249-405-11	CARBON	100	5%	1/4W	
R1517	1-249-405-11	CARBON	100	5%	1/4W	
R1518	1-249-434-11	CARBON	27K	5%	1/4W	
R1519	1-249-469-11	CARBON	100K	5%	1/4W	
R1520	1-249-469-11	CARBON	100K	5%	1/4W	
R1521	1-249-441-11	CARBON	100K	5%	1/4W	
R1522	1-249-441-11	CARBON	100K	5%	1/4W	
R1527	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1528	1-249-441-11	CARBON	100K	5%	1/4W	
R1531	1-249-465-11	CARBON	47K	5%	1/4W	
R1532	1-249-437-11	CARBON	47K	5%	1/4W	
R1534	1-249-428-11	CARBON	8.2K	5%	1/4W	
R1535	1-249-417-11	CARBON	1K	5%	1/4W	
R1536	1-249-405-11	CARBON	100	5%	1/4W	
R1546	1-249-405-11	CARBON	100	5%	1/4W	
R1547	1-247-700-11	CARBON	100	5%	1/4W	
		<CONNECTOR>				
U2	*1-566-055-11	PIN, CONNECTOR 3P				
U3	*1-566-057-11	PIN, CONNECTOR 5P				
U4	*1-566-060-11	PIN, CONNECTOR 8P				
U5	*1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P				

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MISCELLANEOUS
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⚠	1-230-940-31	RESISTOR ASSY, HIGH-VOLTAGE
⚠	1-426-350-11	COIL, DEMAGNETIZATION
⚠	1-451-275-11	DEFLECTION YOKE (Y28PFA)
	1-452-032-00	MAGNET, DISK; 10MM ϕ

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REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	
	⚠1-536-591-61	BLOCK, ANTENNA (USA ONLY)	
	⚠1-536-902-21	BLOCK, ANTENNA (CND ONLY)	
	⚠1-559-396-11	CORD, POWER (USA ONLY)	
SP901	1-503-918-11	SPEAKER	
SP902	1-503-918-11	SPEAKER	
T504	⚠1-439-372-13	TRANSFORMER ASSY, FLYBACK	
TU101	⚠1-463-771-11	TUNER, ET (BTP-201A)	
V901	⚠8-737-753-05	PICTURE TUBE (A68JNT50X)	

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ACCESSORIES AND PACKING MATERIALS
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PART NO.	DESCRIPTION	REMARK
A-1470-824-A	COMMANDER ASSY (RM-757)	
1-513-379-00	CONVERTER (EAC-25) (CND ONLY)	
1-562-443-11	CONNECTOR, ANTENNA (USA ONLY)	
*4-384-027-01	BAG, PROTECTION	
*4-388-939-02	CUSHION (UPPER) (ASSY)	
*4-388-940-01	CUSHION (LOWER) (ASSY)	
*4-388-965-02	INDIVIDUAL CARTON	
4-482-537-41	MANUAL, INSTRUCTION	
4-482-537-51	MANUAL, INSTRUCTION (CND ONLY)	